PURCHASING DIVISION
ROOM 210 CITY HALL
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450-8022

RAWLE DUMMETT **PHONE 203-630-4115**
PURCHASING OFFICER

ADDENDA #004

TO THE BID FOR: B024-33 –Center Street /Bridge State Project No. 79-212 Center St Bridge No. 04185

FOR: City of Meriden

BID DUE DATE: February 13, 2024 @ 11 AM

The purpose of this Addendum is to extend the deadline for bid submissions to February 13, 2024 @ 11:00 a.m. and to provide additional information.

Question: Can you please clarify so that we can provide a quote to the bidding GCs on this project.
Answer: ***There should be 5 gates in total. The 5th one on the center 16-inch pipe is a spare and is 18 x 18 like the others.***

Question: The disposal facilities listed under Disposal of Sediment are closed except for 1. Please review and add more facilities that can take sediments. If you are using CTDOT specs then please provide the most updated approval list for facilities
Answer: ***Other approved CTDOT may be proposed. Subject to review and approval by the City***.

Question: Disposal of Controlled Materials – Can other CTDOT approved facilities be used that are not provided in the specification?
Answer: ***Yes, however they are subject to review and approval by the City***

Question: What is the Stainless Steel grade for the slide gates?

Answer: ***304***

Question: Please verify there are 4 slide gates on the **INLET** structure. The plan view shows a slide gate symbol on the center outlet pipe. Is that a fifth slide gate and if so, what size is it??

Answer: ***The inlet chamber has (2) downward adjusting weir gates and (3) 18 x 18 slide gates***

Question: Note #1 on sheet 13 of 40 mentions a fourth slide gate on the **OUTLET** structure, where the plan view shows 3. Please confirm a fourth slide gate and provide its dimensions…

Answer: ***One slide gate is to be furnished as a spare – not to be installed, delivered to the client only.***

Question: The sanitary sewer trench detail shown on Plan Sheet 14 of 40 calls for 3/4" crushed stone bedding. The Technical Specifications for the sanitary sewer specify 3/8" and ¾" crushed stone. What size stone bedding should be used?
Answer*: ¾" Stone is acceptable.*

Question: The plans call for the installation of 6 LF of 27" ductile iron pipe to connect the existing sewer to proposed Sanitary Manhole No. 1. We have been unable to locate a supplier of 27" ductile iron pipe. What other type of pipe would be acceptable for the connection?
Answer: ***27-inch SDR26 pipe may be substituted***.

Question: What type of pipe are the existing 27" and 30" sanitary sewer? How are the connections between the new 27" and 30" sewer pipes and the existing 27" and 30" sewer pipes to be made?
Answer: ***Sewer pipe in Meriden is generally RCP – should assume pipe shown in plans is RCP and attachment of proposed pipe is to RCP for the purposes of the bid. The contractor shall field verify prior to the start of work.***

Question: Note 2 on Plan Sheet 13 of 40 calls for the ductile iron sewer pipe to have interior ceramic epoxy coating. The Technical Specification for the ductile iron sewer pipe calls for unlined pipe with asphalt seal coating on the outside and does not mention interior ceramic epoxy coating. Please clarify.
Answer: ***If DI pipe is to be used the interior ceramic epoxy coating is to be applied.***

Question: Are specialty pipe gaskets, such as EDPM or nitrile, required for the ductile iron sewer pipe?
Answer: ***EPDM is to be used for gaskets***.

Question: The Technical Specification for the ductile iron sewer pipe states that the price for the pipe includes the concrete encasement for the river crossing. The concrete encasement detail shown on Plan Sheet 13 of 40 notes that "PCC03440 concrete encasement for pipes (typ.) paid for under "Footing Concrete"". Please clarify.
Answer: ***The encasement should be paid for under the footing concrete item.***

Question: Reference is made to the Inlet Siphon Chamber details shown on Plan Sheet 13 of 40. The plan view appears to show a slide gate on the center 16" outlet pipe. However, none is shown. Is a slide gate required at this location? If so, what size and type of slide gate is to be installed?
Answer: ***Furnish slide gates for 16-inch pipe inlets.***

Question: Reference is again made to the Inlet Siphon Chamber details shown on Plan Sheet 13 of 40. Section B- B does not provide any information regarding the dimensions of the opening in the 6" concrete baffle wall. Please clarify.
Answer: ***Please see attached updated plan.***

Question: Reference is made to the Outlet Siphon Chamber details shown on Plan Sheet 13 of 40. The plan view calls for the installation of one (1) 3.5' x 4' and two (2) 2.5' x 4" slide gates. Note 1, however, calls for the installation of three (3) equal width slide gates. Please clarify.
Answer: ***Furnish 3 equal width slide gates.***

Question: Reference is again made to the Outlet Siphon Chamber details shown on Plan Sheet 13 of 40. Note 1 calls for the contractor to furnish four (4) slide gates. If two different size slide gates are to be installed, please specify the size of the fourth slide gate to be furnished.
Answer: ***Slide gates are to be equal sized.***

Question: The plans call for a hydrant to be relocated at Station 2+33 left. A Bid Item (1303201A) has been provided for "Relocate Hydrant (Complete)". The Technical Specifications provided for this item pertain to "Remove and Reset Fire Hydrant" and "Fire Hydrant (Water Main)". Please clarify.

Answer: ***The item for relocate hydrant is for the temporary condition as needed. A new hydrant should be installed in the final condition.***

Question: A Bid Item (1303198A) has been provided for "Hydrant Water Main". What is this item for?
Answer: ***A new hydrant shall be installed at the location of the existing hydrant in the final condition.***

Question: Reference is made to Plan Sheet 24 of 40 which shows the relocated 8" water main installed on brackets attached to the downstream parapet. From the way the water main is shown it appears that the water main rests on a roller support. No other pipe support details are provided and roller assemblies are not addressed in the technical specifications. Are roller supports for the water main on the bridge required?
Answer: ***Refer to sheet 39 of 40 for roller support requirements.***

Question: Reference is made to the technical specifications provided for "Temporary Support of Utilities". Under "Description" it states that "all pipes, fittings, equipment and labor necessary to maintaining temporary service and providing temporary water will be included in this item". The plans do not show any work associated with maintaining temporary service and providing temporary water. Are temporary services or water required on this project? If so, please provide plans showing the extent of the required work.
Answer: ***The water main is proposed to be cut and capped during construction at approximately station 2+07 and 4+76. During construction service will need to be maintained at 255 Center Street and any other points within the limits of the cut and cap. The temporary support of utilities is intended to cover this work. If additional details are needed, they can be provided by the City Water Department and engineer prior to start of work.***

Question: Bypass pumping of the existing sanitary flows will be required to install the new sanitary sewer pipe and manholes. The plans provided do not show the location of the next existing sanitary manhole south of proposed Sanitary Manhole No. 5. Please provide a drawing showing the location of the next manhole downstream of proposed Sanitary Manhole No. 5 on the existing 30" main.
Answer: ***The location of this manhole is outside the limits of the existing survey, but it is assumed to be on Pratt Street. The contractor would be required to field verify this.***

Question: Please upload the Task 210 and 310 environmental investigation reports referenced in the special provision "NOTICE TO CONTRACTOR - ENVIRONMENTAL INVESTIGATIONS" to the project document portal.
Answer: ***Included***

Question: If available, please upload the geotechnical report to the project document portal.
Answer: Included

Question: The "NOTICE TO CONTRACTOR - ENVIRONMENTAL INVESTIGATIONS" references two AOEC's and a LL-AOEC's within the project limits. Please provide a plan showing the locations and limits of these areas.
Answer: ***Provided with Environmental Reports***

Question: Please upload any permits or permit applications associated with the project to the project document portal.
Answer: ***Included***

Question: Is the installation and removal of cofferdams or temporary earth retaining system in Harbor Brook allowed outside of the June 1 through September 30 period?
Answer: ***Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year unless specifically prohibited by a permit condition. This includes installation and removal.***

Question: What is the vertical pay limit of the temporary earth retaining systems placed in the channel that act to channelize the brook – the top elevation of the system given on the contact drawings to the elevation at the bottom of the excavation *or* the elevation of the channel bottom to the elevation at the bottom of the excavation?
Answer: ***As shown on the plans***

Question: Please provide the required design loads for the temporary gas main bridge that the contractor is required to provide per the contract documents.
Answer: ***The utility owner will provide this to the selected contractor***.

Question: Given the proximity of construction to existing properties, specifically 255 Center Street, and the geotechnical conditions, please consider adding a monitoring structures item to the bid documents.

Answer: ***Monitoring Structures has been added to the contract documents for this property***.

Question: "SECTION 6.10 - DRILLING HOLES AND BONDING ANCHORS AND DOWELS" of the special provisions states that the number of dowels to be field tested is shown on the plans. We cannot locate this information – please provide.
Answer: ***This item has been removed from the contract and replaced with drilling and grouting reinforcing bars. See attached revised contract documents.***

Question: In order to maintain access to the driveways to the properties east and west at approximately station 2+70 as shown on contract drawing 3 as well as not undermine the temporary utility pole located just east of wingwall 1B, temporary earth retaining systems not depicted on the plan will be required during the construction of wingwalls 1A and 1B during Stage 2. Please confirm the quantity for Item 0716000A.
Answer: ***If additional TERS are needed based on the contractor's means and methods it would be reviewed for approval prior to the work being performed.***

Question: The temporary overhead electrical lines pass over the footprint of Wingwall 1B. Per OSHA, work operations are required to maintain a 10' clearance from active power lines. Will any short-term outages of the overhead power lines in this area be permitted?
Answer***: If the contractor's means and methods require operating equipment within the clearance limits set forth by OSHA, adjustment to the utility location or short-term outages should be discussed with the utility owners prior to performing the work.***

Question: The DBE goal per the Invitation to Bid is 25%. This goal seems excessively large and will be very difficult to obtain. Please confirm the DBE goal for the project.

Answer: 12% DBE Goal

Question: Section 3.1 of the Standard Form of Agreement, the "CONTRACT TIME AND LIQUIDATED DAMAGES" section of the special provisions, and Section 1.08 of the special provisions all provide different determinations of the contract time for the project. Please clarify the number of days provided for the completion of the work and if they exclude December 1 through March 31 period the "winter shutdown period" as defined in Section 1.08.07 of the CT DOT Form 818.
Answer: ***The number of calendar days for this project are as stated in section 1.08.07, 397 days. Winter shutdown is not included in the calendar days.***

Question: The contract drawings depict an existing 8" sanitary sewer line just to the east of the abandoned 21" sewer line running from a manhole at 2+83 to the southern limit of the project. Is this line active and any of its service connections active within the project limits?
Answer: ***Yes, it is assumed that this line is active and so are any services connected to it within the project limits.***

Please acknowledge receipt of all addenda in your Bid Submission.

Bid Delivery - Proposals may be dropped off prior to February13, 2024, either in person or by courier service. At this time the City does not have the infrastructure to accept electronic proposals and therefore bids will only be accepted as directed in the Bid documents.

Rawle Dummett
Purchasing Officer
Dated: January 19, 2024

CITY OF MERIDEN
DEPARTMENT OF PUBLIC WORKS
HOWARD WEISSBERG, P.E., DIRECTOR
142 EAST MAIN STREET, ROOM 19
MERIDEN, CT. 06450-5667
(203) 630-4018 FAX (203) 630-4025

October 3, 2018

City of Meriden Department of Public Works
Attn: Howard Weissberg, P.E.
142 East Main Street, Room 19
Meriden, CT 06450

RE: Floodplain Development Permit Application
Center Street Bridge Replacement

Dear Mr. Weissberg:

The Flood Control Implementation Agency, at its regular meeting held on October 2, 2018, voted to approve the City's request for replacement of the Center Street Bridge over Harbor Brook, to be constructed within the 100-year floodplain of Harbor Brook

If you have any questions of comments, please feel free to contact me at 203-630-4019.

Very truly yours,

Brian Ennis, P.E.
Associate City Engineer

Attachment: Permit for Floodplain Development

c.c. Flood Control Implementation Agency
File – Center Street Bridge Replacement Application
File

WELTI GEOTECHNICAL, P.C.

GEOTECHNICAL ENGINEERING

227 Williams Street · P.O. Box 397
Glastonbury, CT 06033-0397

(860) 633-4623 / FAX (860) 657-2514

July 27, 2018

Mr. Keegan O. Elder
WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

Re: Geotechnical Study for the Replacement of Bridge No. 04185, Center Street over Harbor Brook in Meriden, CT; CTDOT Project No. 79-212

Dear Keegan:

1.0 Four borings (CT-1 through CT-4) were drilled in October, 2001 by Associated Borings Company, Inc.. The borings were drilled to a maximum depth of 70 feet below the pavement grades on Center Street. The borings were drilled through the overburden with a 2.5" hollow stem auger and sampling was conducted with a 1.375" standard split spoon sampler. The borings were cored 5 to 10 feet into the bedrock with an AX size core barrel which provides a 1.375" diameter core. The borings were taken at the locations indicated on the Structure Plan drawing 1 furnished by WMC Consulting Engineers. Two borings were taken behind each of the previously proposed structure abutment locations. *The 2001 boring logs and boring samples were reviewed by Clarence Welti Associates, Inc. solely to observe indications of subsurface conditions for preparing this geotechnical study. No test borings, sampling or services to evaluate subsurface environmental conditions were performed by Welti Geotechnical, P.C..*

2.0 The **Subject Project** includes the complete replacement of the existing bridge carrying Center Street over Harbor Brook in Meriden. The existing 24.5 foot clear span masonry arch, retaining walls and foundations will be removed. The new bridge will consist of two separated precast concrete box culverts beginning at Sta 2+99 and ending at Sta 3+45.67. The culverts will support two traffic lanes, shoulders, sidewalks and parapets. New wing walls are proposed in the upstream and down stream channels as part of the proposed brook channel realignment. Roadway approach walls are proposed in each approach to the structure. The culverts will be perpendicular to the roadway and measure 50 feet long from inlet to outlet. The primary south culvert will convey normal flows with an opening of 24 feet wide by 11 feet high. The secondary north culvert will convey higher flows through a 12 feet wide by 10 feet high opening. The boxes will be set level and have a layer of stream bed material covering the floors. The south box floor invert will be at Elev. 122.32 and the streambed at Elev. 125.3. The north box floor invert will be at Elev. 123.32 and the streambed at Elev. 124.30. The bottom surfaces of the boxes will be about Elev. 121.3 and Elev. 122.5. The wing walls and cut-off wall foundations will be at Elev. 119.32. The approach wall foundations will be at about Elev. 129 in the fills behind the normal wing walls. The water surface elevation observed under the existing structure on 20 October, 2014 is reported to be approximate Elev. 126. The proposed 100 year water surface at the upstream side is reported at Elev. 135.20. The proposed design is designated as low scour risk. No scour depths were computed because the structures will be box culverts. The upstream channel of Harbor Brook flows in a southwesterly direction as it enters the structure and deflects sharply in a west direction through the structure.

2.1 The road work will include about 300 feet of approach road reconstruction. The average pavement grade across the culverts will be Elev. 135.35. The roadway is on a horizontal tangent section at the crossing. The existing geometry in the north approach will be largely be maintained with a tangent profile transition from 0.669% gradient to 0.376% gradient across the structures. The south approach profile will include minor filling as it enters a crest vertical curve that transitions through a short tangent length to a sag curve. A sanitary siphon consisting of three 16" diameter pipes (Inv. Elev. 121.16) will be located below the channel approximately 10 feet off the culvert outlet. Siphon chambers with Inv Elev. 120 will be placed on each side of the outlet channel. Other utilities that will require relocation within the project limits include gas, electric, water, telephone and storm sewers.

3.0 The **Geologic Origin** of the natural inorganic soils at the site and environs are from glacial lake deposits overlying glacial moraine deposit atop the bedrock. The lake deposits consist generally of medium compact fine sand and silt or fine to coarse and with little to some silt and gravel. The glacial moraine (Till) deposits consist generally of compact fine to medium sand, some silt, little gravel. The bedrock based on review of the rock cores and geologic mapping is the New Haven Arkose Formation of Sandstone.

3.1 The **Soil/ Rock Cross Sections** from the 2001 boring logs are generally as follows:

South Approach (see borings CT-1 and CT-2, taken from Elev. 135)

At boring CT-1; Bituminous Concrete to 2.5"

At boring CT-2; Concrete to 2.5"

Probable FILL; fine to coarse SAND, some Silt, little Gravel to 15 to 20 feet below grade (Elev. 110 to Elev.115), medium compact

Fine SAND and SILT to about 25 feet (to Elev. 110), loose to medium compact

Fine to coarse SAND, little Silt, little Gravel; or fine SAND, some Silt to 45 feet (Elev. 90), medium compact

Glacial Moraine (Till); fine to medium SAND, some Silt, little Gravel to the top of bedrock at 46 to 55 feet below grade, dense to very dense

At boring CT-2; Weathered Sandstone to the top of hard bedrock at 50 feet below grade (Elev. 89±)

At boring CT-1; Cored Sandstone from 55 feet (from estimated Elev. 80) to 65 feet below grade; Run #1 - Recovered = 4", Run #2 - Recovered = 48"

At boring CT-2; Cored Sandstone from 50 feet (from estimated Elev. 85) to 60 feet below grade; Run #1 - Recovered= 16", Run #2 - Recovered = 16"

North Approach (see borings CT-3 and CT-4, taken from Elev. 135)

At boring CT-4; Concrete to 6"

Fine to coarse SAND, some Silt, little Gravel to 20 to 25 feet below grade, medium compact
Note: Probable FILL to about 20 feet

At boring CT-3; fine SAND and SILT to 25 feet (to Elev. 110), medium compact

Fine to coarse SAND, little Silt, little Gravel to 40 to 45 feet (Elev. 90±), medium compact

Stratum of fine SAND, some Silt to 50 to 55 feet, loose to medium compact

Glacial Moraine (Till); fine to medium SAND, some Silt, Gravel to the top of bedrock at 54 to 57 feet below grade, dense to very dense

Weathered Sandstone to 55 to 60 feet below grade (estimated Elev. 80 to Elev. 75)

At boring CT-3; Cored Sandstone from 60 feet (from estimated Elev. 75) to 70 feet below grade; Run #1 - Recovered = 26"; Run #2 - Recovered = 60"

At boring CT-4; Cored Sandstone from 55 feet (from estimated Elev. 85) to 60 feet below grade; Run #1 - Recovered = 42"

3.1.1 *There will be existing fills associated with the roadway section, the structures and utilities that are present within the project limits.*

3.2 The **Water Table** was recorded on the boring logs at 10 feet below grade at 0 hours and at 24 hours. It can be assumed that the water table at the abutment excavations will correspond closely with the level in the brook. The site is subject to flooding. *The natural soils may be susceptible to remolding under equipment when wet.*

3.3 Regarding the **soil properties** the following shall apply:

Natural Lake Deposits to about 55 feet below grade:

Unit weight	125 pcf
Submerged Unit Weight:	65 pcf
Internal Friction Angle *	30 to 32°
Cohesion:	0 psf
Minimum Stiffness Modulus:	350 Tons/sf

Glacial Moraine Deposits:

Unit weight	130 pcf
Submerged Unit Weight:	70 pcf
Internal Friction Angle *	35+°

Bedrock:

Medium Hard Sandstone (below the weathered zone in the upper 1 to 4 feet)

Typical compressive value of the harder rock (ultimate): 6,000 to 7,000 psi.

Elastic Modulus: 100,000 Tons/sf (estimated) Poisson's Ratio: 0.3

* Estimated from SPT values from the project test borings

4.0 The **Criteria for Foundation Type and Loading** are as follows:

1. The maximum total settlement for the culverts and walls shall not exceed 1" and the maximum differential settlement shall not exceed ½ the maximum settlement.

2. The box culverts and short retaining walls are exempt from detailed seismic analyses according to the CT DOT and AASHTO Bridge design specifications.

3. The sanitary siphon may have more strict criteria than those cited above, which must be specified by the design engineer.

This criteria is generally applied to bridges of similar character. If the owner, the architect, the engineers find the criteria as unacceptable, the writer shall be informed to permit additional geotechnical input.

4.1 The culverts and retaining walls will be designed in accordance with the AASHTO Load and Resistance Factor Design method (LRFD). The contract will be prepared in standard English / U.S. customary units.

5.0 Regarding **Foundation Type,** the structure plan furnished for this study shows the bottom surfaces of the boxes at about Elev. 121.3 to Elev. 122.5. The wing wall and cut-off wall foundations will be at Elev. 119.32. The subgrades will range from approximately 13 to 16 feet below the road surface and up to 7 feet below the observed water surface elevation. The box culvert bottoms can be on shallow bearing foundations and the retaining walls can be supported with spread footings.

The foundation subgrades should be on the natural inorganic soils after the removal of any existing fills, existing structures and possible organic soils. The natural soils at subgrade elevations may be susceptible to remolding under equipment when wet. ***It is recommended that there be at least 12" of 3/8" crushed stone beneath the footings on the natural soils and as an initial layer beneath controlled fills where atop a wet subgrade.*** If the subgrades are primarily in wet silt and fine sand, it is recommended to place an initial 3" thick plain concrete mud slab on the subgrade before placing the crushed stone layer. The crushed stone will also provide a stable layer to pump water from during construction. Cofferdams will be required to permit placing the reinforced foundations in acceptable dry condition. ***Based on the potential for the soils becoming "quick" at the new structures during vibratory extraction, it is recommended to leave the sheet pilings in place.***

5.1 Regarding establishment of the ultimate bearing capacity, the ultimate loading is based on the internal friction angle, which is related to the soil density and overburden weight. Based on the sample blow counts in the natural soils and fills the angle of internal friction of the supporting stratum is at least 30°, which indicates an ultimate capacity of at least 28 ksf. The AASHTO LRFD resistance factor at the Strength Limit State for the geotechnical resistance of spread footings on soil with the friction angle estimated from SPT data is be φ_R = 0.45. This indicates the LRFD design bearing resistance equal to at least 12 ksf. Regarding the Service State case for settlement, the recommended unfactored bearing resistance based on the estimated elastic stiffness modulus of 350 Tons/sf is 4 ksf. This is to maintain settlements within the design criteria.

5.2 The **Static Lateral Soil Loading** on the box culverts should be determined in accordance with the AASHTO provisions for buried structures. The at-rest pressure coefficient is $\mathbf{K_O = 0.45}$. The lateral soil loading on retaining walls can be based on normal active pressure using the coefficient $\mathbf{K_A = 0.28}$. The pervious structure backfill should extend behind the abutments and retaining walls for a horizontal distance equal to at least the height of the backfill. The friction angle (δ) between the concrete and gravel backfill is typically 0.6 to 0.8 times the angle of internal friction. The ultimate value would be 30° and the design value can be **δ = 20**°. The LRFD lateral soil pressure on the substructures typically includes a live load surcharge in feet of soil. The ultimate sliding factor for the concrete cast on sand is **0.60.** The AASHTO Table 10.5.5.2.2-1 specifies the resistance factors for sliding on sand or crushed stone as 0.90 for precast concrete and 0.8 for cast-in-place concrete.

5.3 The **Backfill and Controlled (structural) Fills for Structures** should be free draining Pervious Structure Backfill and Compacted Granular Fill conforming to the requirements of ConnDOT Form 817, Section M.02.06, Grading B. This material would have a unit weight of 125 pcf and angle of internal friction of 34° when compacted to 95% of Modified Optimum Density at a water content of 6 to 8% .

5.4 The **Frost Protection Depth** for spread footings supporting civil structures is 4.0 feet below the finished grades.

5.5 The **Foundation Design Parameters** are summarized as follows:

PARAMETER	LRFD DESIGN VALUE	LRFD ULTIMATE CAPACITY	COMMENTS
Spread Footing Bearing on Natural Soi l For Strength Limit State	12 ksf	28 ksf	Bearing Resistance Factor, $\varphi_r = 0.45$
Spread Footing Bearing on Natural Soil For Service I Limit State	4 ksf	28 ksf	
Backfill Unit Weight	125 pcf		Typical Value when Compacted to 95% MOD
Angle of Internal Friction φ, Backfill	34°		Typical Value when Compacted to 95% MOD
At-Rest Pressure Coefficient	0.45		Compacted Pervious Backfill
Active Pressure Coefficient (level backfill)	0.28		Compacted Pervious Backfill
Interface Friction Angle Backfill to Abutment	20°	30°	
Poisson's ratio (ν)	0.30		
Sliding Factor, precast concrete	0.54	0.60	Sliding Resistance Factor, $\varphi_r = 0.90$
Sliding Factor, cast-in-place concrete	0.48	0.60	Sliding Resistance Factor, $\varphi_r = 0.80$
Frost Protection Depth	4.0 ft		CT DOT

7.0 Regarding **Earthwork** and temporary slopes, the on site soils are largely defined as OSHA Type C, which will require sloping of unshored excavations exceeding 5 feet in height to slopes less than 34° from the horizontal (1½H : 1V).

7.1 Long Term Earth Slopes should be 2H:1V, or flatter. Steeper slopes will require stone cladding.

7.2 The excavations for foundations, the sanitary siphon, siphon chambers and other deep utility structures must take place inside closed cofferdams to provide stable, dry subgrades for the construction. In general, the estimated wing wall subgrades would be about Elev. 118, while the siphon chambers could be several feet deeper after accounting for the anti-flotation mat thickness (not determined). The cofferdams should be with tightly threaded steel sheets and threaded corner pieces. The sheets should be designed to extend to sufficient depths below the subgrade elevations to address subgrade stability (i.e., boiling). Internal bracing will probably be required. The designs should include the 3/8" crushed stone layers and mud slabs as cited in section 5.0 above. Dewatering may require well points inside the cofferdam. The water level should be maintained 12" below the final subgrades. The staged construction sequence would typically require support of the approach road soils between the stages using temporary sheet pilings. Temporary sheet pilings, cofferdams and de-watering are contractor provided items and must be designed by a professional engineer registered in Connecticut. ***As cited above the sheeting should be left in place.*** The designs can be based on the estimated soil properties cited in section 3.3 above.

7.3 No hydraulic criteria have been provided to address channel erosion and scour protection. Any channel armoring should have properly designed underlay and filter materials. The channel should be maintained acceptably dry during construction to permit placement of the armor system and underlay materials. The mean particle size (d_{50}) gradation for filter materials should be based on the final design discharge parameters and tail water depth when these properties are available.

8.0 This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Welti Geotechnical, P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

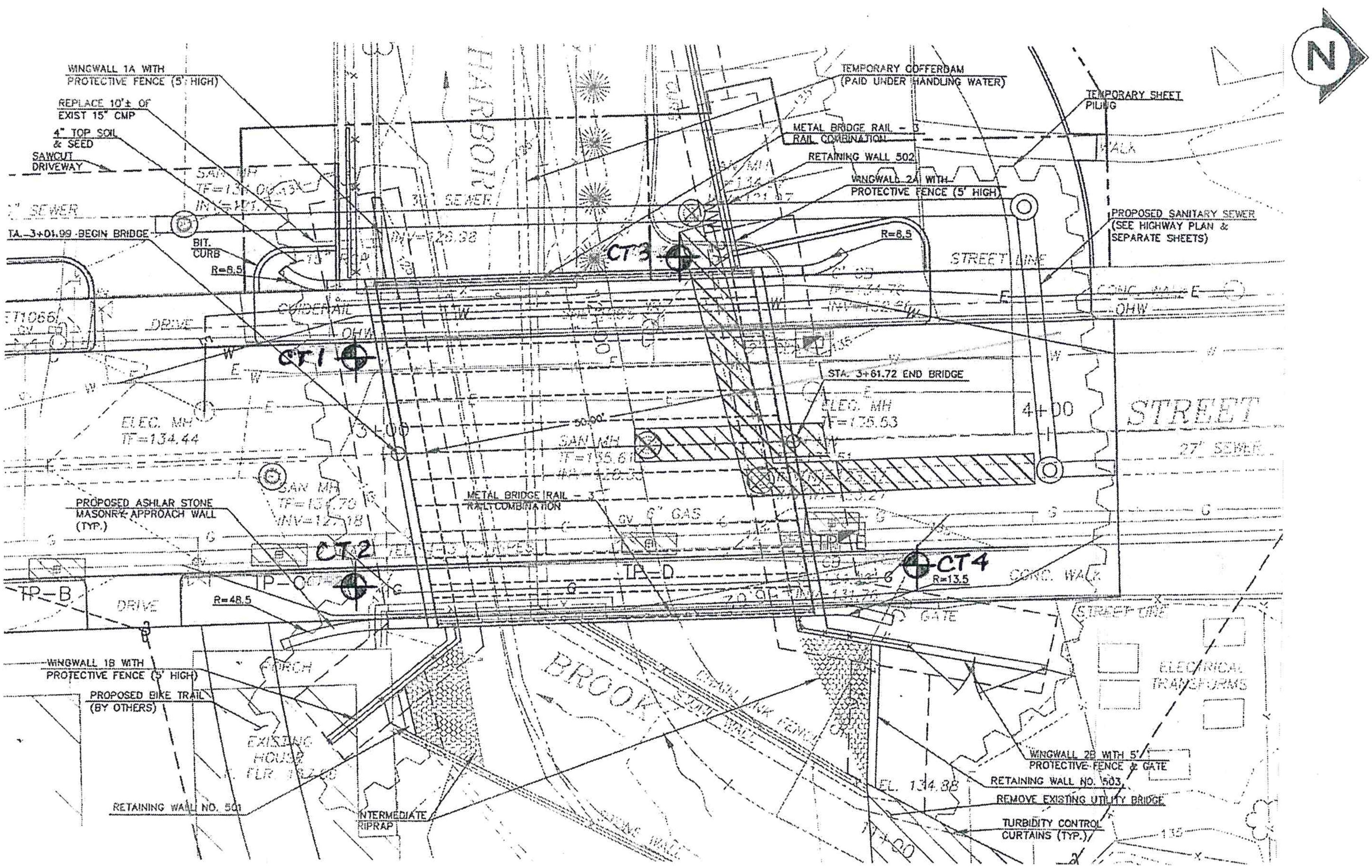
Very truly yours,

John J. Bear, P.E.

Max Welti, P. E.
President, Welti Geotechnical, P. C.

APPENDIX

Boring Location Plan
+
Boring Logs
+
Grain Size Gradation Test Reports



SHEET NO. :	1
SCALE:	NONE
DATE PREPARED:	OCTOBER, 2014

REPLACEMENT OF BRIDGE 04185, CENTER STREET OVER HARBOR BROOK, MERIDEN, CT

BORING LOCATION PLAN

DR. CLARENCE WELTI, P.E., P.C.
227 WILLIAMS STREET, P.O. BOX 397
GLASTONBURY, CONNECTICUT 06033

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	AX
SIZE I.D.	2.5"		1.375"	1 3/8"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET	
LINE & STA.	
N. COORDINATE	
E. COORDINATE	
SURFACE ELEV.	
HOLE NO.	**CT-1**

GROUND WATER OBSERVATIONS

AT 10.0 FT. AFTER 0 HOURS

AT 10.0 FT. AFTER 24 HOURS

START DATE 10/8/01

FINISH DATE 10/8/01

DEPTH	SAMPLE NO.	BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					BITUMINOUS CONCRETE (0.20)	
					RED/BR.FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL	
5	1	9-11-10-10	5.00'-7.00'			
10	2	10-11-12-11	10.00'-12.00'			
15	3	12-15-14-19	15.00'-17.00'			
20	4	4-5-6-6	20.00'-22.00'		20.0 RED/BR.FINE SAND AND SILT	
25	5	4-8-9-11	25.00'-27.00'		25.0 RED/BR.FINE-CRS.SAND, SOME GRAVEL, LITTLE SILT	
30	6	7-8-8-9	30.00'-32.00'			
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET

INSPECTOR: SHAWN SMITH

SHEET 1 OF 2 HOLE NO. CT-1

CLARENCE WELTI ASSOC., INC.
P.O. BOX 397
GLASTONBURY, CONN 06033

CLIENT: STATE OF CONNECTICUT

PROJECT NAME: BRIDGE #04185
CENTER STREET OVER HARBOR BROOK

LOCATION: MERIDEN, CT.

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
	7	9-12-10-10	35.00'-37.00'			
40	8	4-5-4-5	40.00'-42.00'		RED/BR.FINE-CRS.SAND, LITTLE SILT & GRAVEL	40.0
45	9	8-10-11-5	45.00'-47.00'		RD/BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	45.0
50	10	16-29-37-50	50.00'-52.00'		RED/BR.FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	50.0
55		-			CORED BEDROCK - RED/BR.SANDSTONE RUN #1 55.0' - 60.0' RECOVERED 4" RUN #2 60.0' - 65.0' RECOVERED 48"	55.0
60						
65					BOTTOM OF BORING @ 60.0'	65.0
70						
75						

LEGEND: COL. A:
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON
PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET
INSPECTOR: SHAWN SMITH

SHEET 2 OF 2 HOLE NO. **CT-1**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	AX
SIZE I.D.	2.5"		1.375"	1 3/8"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET	
LINE & STA.	
N. COORDINATE	
E. COORDINATE	
SURFACE ELEV.	
HOLE NO.	CT-2

GROUND WATER OBSERVATIONS		
AT 10.0 FT. AFTER 0 HOURS	START DATE	10/3/01
AT 10.0 FT. AFTER 24 HOURS	FINISH DATE	10/3/01

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					CONCRETE 0.20	
					RED/BR.FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL	
5	1	5-7-14-5	5.00'-7.00'			
10	2	5-8-12-14	10.00'-12.00'			
15	3	4-8-10-14	15.00'-17.00'		15.0 RED/BR.FINE SAND AND SILT	
20	4	2-2-2-1	20.00'-22.00'			
25	5	5-9-8-9	25.00'-27.00'		25.0 RED/BR.FINE-CRS.SAND, LITTLE SILT & GRAVEL	
30	6	4-4-4-4	30.00'-32.00'			
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET

INSPECTOR: SHAWN SMITH

SHEET 1 OF 2 HOLE NO. CT-2

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT: STATE OF CONNECTICUT	PROJECT NAME: BRIDGE #04185 CENTER STREET OVER HARBOR BROOK; LOCATION: MERIDEN, CT.

DEPTH	SAMPLE NO.	BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
	7	4-7-7-7	35.00'-37.00'			
40	8	4-4-4-4	40.00'-42.00'		40.0 RED/BR.FINE SAND, SOME SILT	
					44.0 RED/BR.FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	
45	9	9-23-20-23	45.00'-47.00'			
					46.0 RED/BR.SANDSTONE	
50					50.0 CORED BEDROCK - RED/BR.SANDSTONE RUN #1 50.0' - 55.0' RECOVERED 16" RUN #2 55.0' - 60.0' RECOVERED 16"	
55						
60					60.0 BOTTOM OF BORING @ 60.0'	
65						
70						
75						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET
INSPECTOR: SHAWN SMITH

SHEET 2 OF 2 | HOLE NO. **CT-2**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	AX
SIZE I.D.	2.5"		1.375"	1 3/8"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET	
LINE & STA.	
N. COORDINATE	
E. COORDINATE	
SURFACE ELEV.	
HOLE NO.	CT-3

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT 10.0 FT. AFTER 24 HOURS

START DATE 10/4/01
FINISH DATE 10/4/01

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					RED/BR.FINE-CRS.SAND, LITTLE SILT & GRAVEL	
5	1	5-6-7-8	5.00'-7.00'			
10	2	12-13-14-10	10.00'-12.00'			
15	3	2-5-8-12	15.00'-17.00'			
20	4	1-7-11-12	20.00'-22.00'		RED/BR.FINE SAND AND SILT	20.0
25	5	7-7-10-13	25.00'-27.00'		RED/BR.FINE-CRS.SAND, LITTLE SILT & GRAVEL	25.0
30	6	2-4-5-5	30.00'-32.00'			
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET
INSPECTOR: SHAWN SMITH

SHEET 1 OF 2 HOLE NO. CT-3

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
	7	3-6-6-7	35.00'-37.00'			
40	8	11-12-12-6	40.00'-42.00'		RED/BR.FINE-MED.SAND, SOME SILT, TRACE GRAVEL	40.0
45	9	3-4-5-6	45.00'-47.00'		RED/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	45.0
50	10	2-2-9-13	50.00'-52.00'			
55	11	17-26-50	55.00'-56.50'		RED/BR.FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL	55.0
					RED/BR.SANDSTONE	57.0
60					CORED BEDROCK - RED/BR.SANDSTONE RUN #1 60.0' - 65.0' RECOVERED 26" RUN #2 65.0' - 70.0' RECOVERED 60"	60.0
65						
70					BOTTOM OF BORING @ 70.0'	70.0
75						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET
INSPECTOR: SHAWN SMITH

SHEET 2 OF 2 HOLE NO. **CT-3**

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	AX
SIZE I.D.	2.5"		1.375"	1 3/8"
HAMMER WT.			140 lbs	
HAMMER FALL			30"	

OFFSET

LINE & STA.

N. COORDINATE

E. COORDINATE

SURFACE ELEV.

HOLE NO. CT-4

GROUND WATER OBSERVATIONS
AT 10.0 FT. AFTER 0 HOURS
AT 10.0 FT. AFTER 24 HOURS

START DATE 10/3/01

FINISH DATE 10/3/01

DEPTH	SAMPLE NO.	BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					CONCRETE	
					0.5	
					RED/BR.FINE-CRS.SAND, SOME SILT, LITTLE GRAVEL	
5	1	6-5-9-5	5.00'-7.00'			
10	2	6-11-11-11	10.00'-12.00'			
15	3	2-8-9-13	15.00'-17.00'			
20	4	5-11-15-14	20.00'-22.00'			
25					25.0	
	5	3-5-5-10	25.00'-27.00'		RED.BR.FINE-CRS.SAND, LITTLE SILT & GRAVEL	
30	6	3-12-12-17	30.00'-32.00'			
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET

INSPECTOR: SHAWN SMITH

SHEET 1 OF 2 HOLE NO. CT-4

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT STATE OF CONNECTICUT	PROJECT NAME BRIDGE #04185 CENTER STREET OVER HARBOR BROOK LOCATION MERIDEN, CT.

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
	7	8-8-10-15	35.00'-37.00'			
40	8	8-9-8-11	40.00'-42.00'		RED/BR.FINE-MED.SAND, LITTLE SILT, TRACE GRAVEL	40.0
45	9	2-2-4-7	45.00'-47.00'			
50	10	19-26-31-21	50.00'-52.00'		RED/BR.FINE-MED.SAND, SOME SILT, LITTLE GRAVEL	50.0
					RED/BR.SANDSTONE	54.0
55					CORED BEDROCK - RED/BR.SANDSTONE RUN #1 55.0' - 60.0' RECOVERED 40"	55.0
60					BOTTOM OF BORING @ 60.0'	60.0
65						
70						
75						

LEGEND: COL. A:

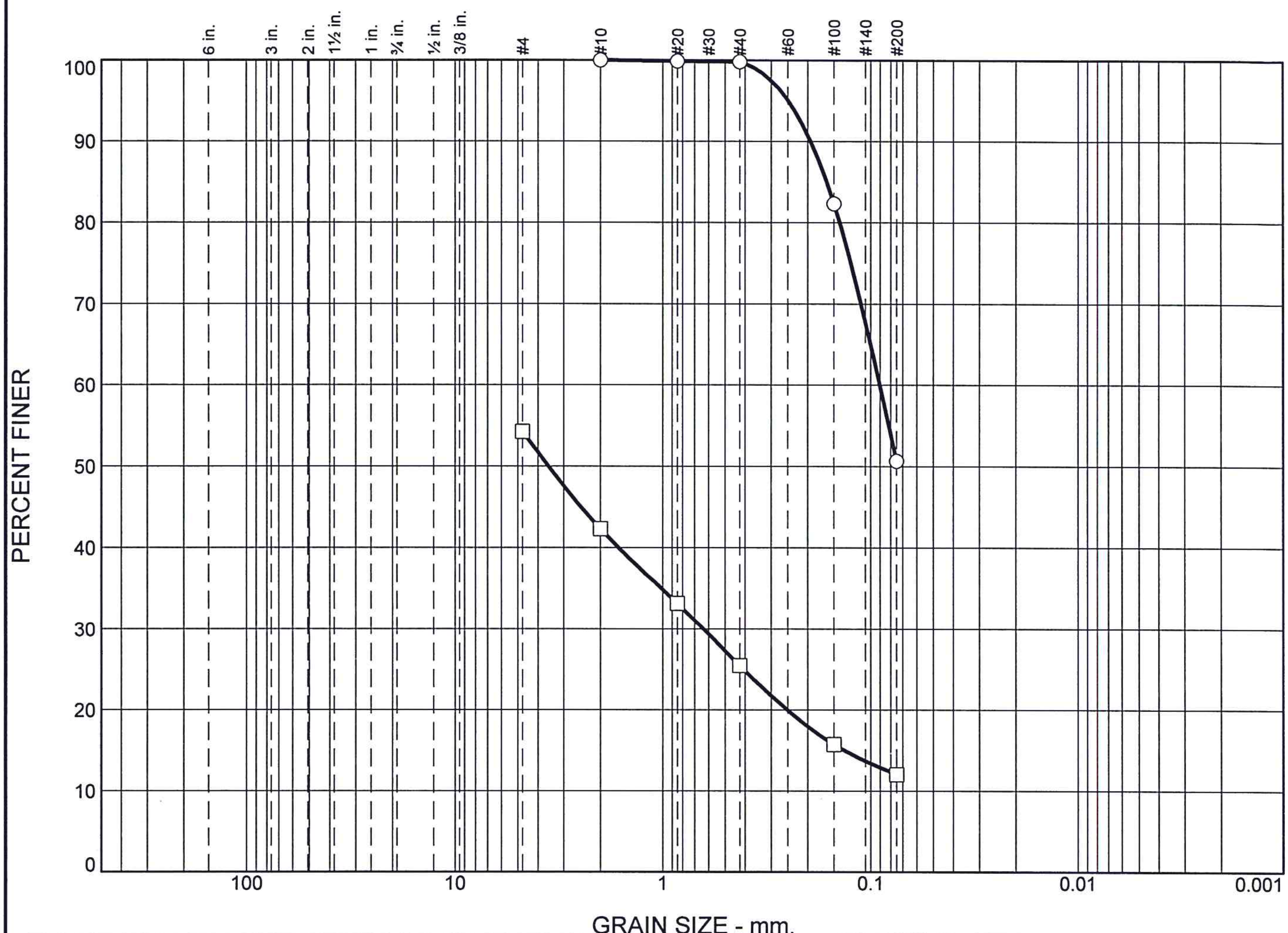
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: JAIME LLORET
INSPECTOR: SHAWN SMITH

SHEET 2 OF 2 HOLE NO. **CT-4**

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.2	49.2	50.6	
□				11.9	16.8	13.4	12.1	

╳	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1625	0.0903						
□					3.5612	0.6324	0.1330			

Material Description	USCS	AASHTO
○ FINE SAND AND SILT □ RED/BR.FINE-CRS.SAND, SOME GRAVEL, LITTLE SILT		

Project No. **Client:** STATE OF CONNECTICUT

Project: BRIDGE #04185

CENTER STREET OVER HARBOR BROOK

○ **Source of Sample:** CT-1 **Depth:** 20.0 **Sample Number:** 4

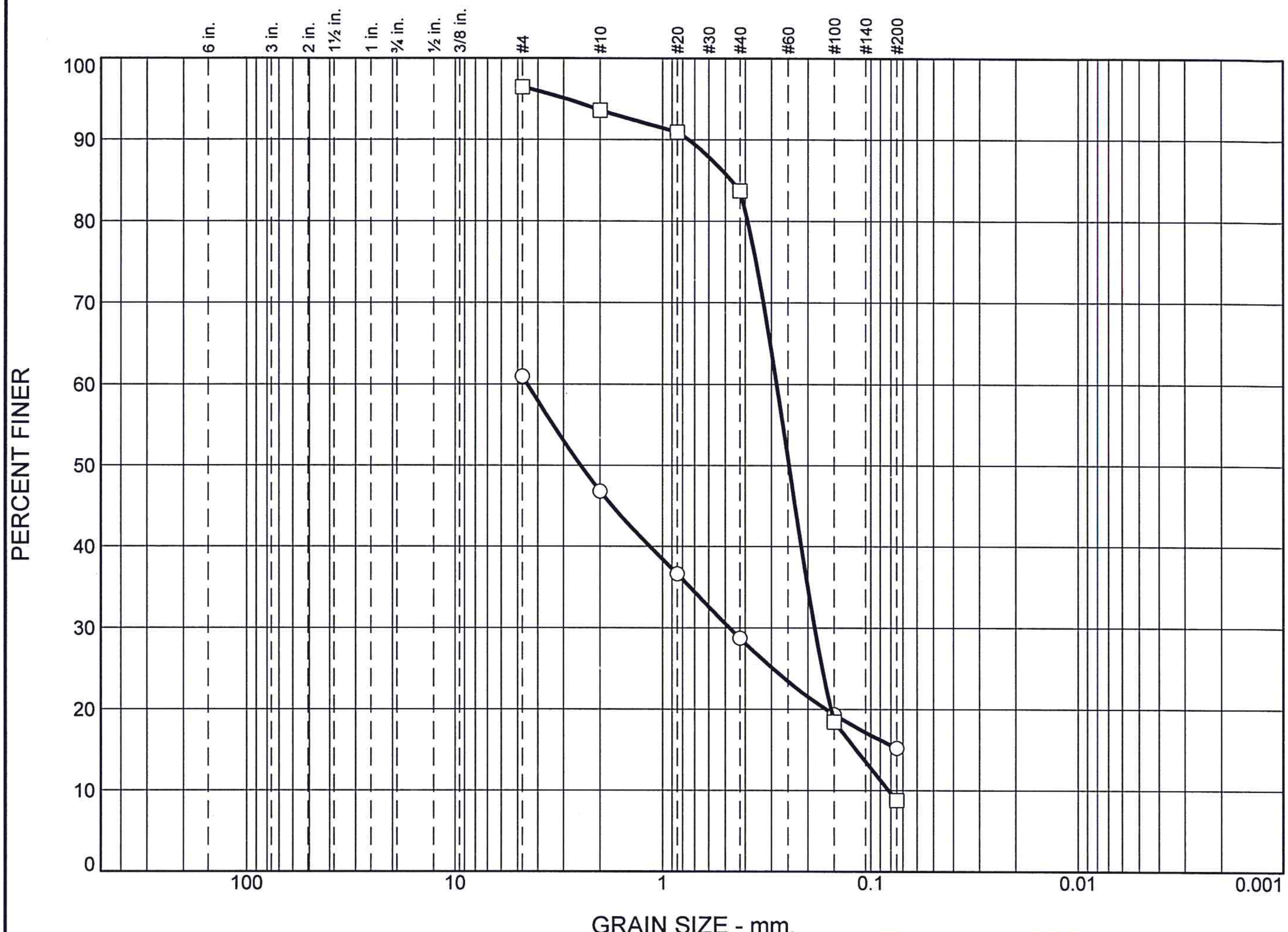
□ **Source of Sample:** CT-1 **Depth:** 25.0 **Sample Number:** 5

Remarks:

CLARENCE WELTI ASSOCIATES, INC.

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				14.2	18.1	13.5	15.2	
□				2.8	9.9	74.9	8.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				4.4999	2.4840	0.4762				
□			0.4678	0.2834	0.2472	0.1859	0.1172	0.0819	1.49	3.46

	Material Description	USCS	AASHTO
○			
□			

Project No. **Client:** STATE OF CONNECTICUT

Project: BRIDGE #04185

CENTER STREET OVER HARBOR BROOK

○ **Source of Sample:** CT-3 **Depth:** 10.0 **Sample Number:** 2

□ **Source of Sample:** CT-3 **Depth:** 50.0 **Sample Number:** 10

Remarks:

CLARENCE WELTI ASSOCIATES, INC.

Figure

THE INFORMATION INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE CITY OF MERIDEN AND IS NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

WHEREVER THE PAY UNITS IN THE LEFT COLUMN APPEAR ON THE DETAILED ESTIMATE SHEET, THEY SHALL BE CONSTRUED TO MEAN THE EQUIVALENT PAY UNITS IN THE RIGHT COLUMN ON THE PROPOSAL FORM.

c.y.	C.Y.
l.f.	L.F.
ton	TON
s.y.	S.Y.
lb.	LB.
s.f.	S.F.
gal.	GAL.
c.f.	C.F.
c.i.	C.I.

FOR THE CONSTRUCTION OF REPLACEMENT OF THE CENTER STREET BRIDGE NO. 04185, CENTER STREET BRIDGE OVER HARBOR BROOK IN THE CITY OF MERIDEN, CONNECTICUT

ROADWAY ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL	TOTAL
0020763 A	DISPOSAL OF SEDIMENTS	TON	100	100
0101000 A	ENVIRONMENTAL HEALTH AND SAFETY	L.S.	L.S.	L.S.
0101117 A	CONTROLLED MATERIAL HANDLING	C.Y.	9190	9190
0101128 A	SECURING, CONSTRUCTION AND DISMANTLING OF A WASTE STOCKPILE AND TREATMENT AREA	L.S.	L.S.	L.S.
0101130 A	ENVIRONMENTAL WORK -SOLIDIFICATION	TON	780	780
0201001	CLEARING AND GRUBBING	L.S.	L.S.	L.S.
0201199 A	REMOVE AND RESET FENCE	L.F.	385	385
0202000	EARTH EXCAVATION	C.Y.	3425	3425
0202100	ROCK EXCAVATION	C.Y.	165	165
0202200	CHANNEL EXCAVATION-EARTH	C.Y.	45	45
0202315 A	DISPOSAL OF CONTROLLED MATERIAL	TON	18610	18610
0202318 A	MANAGEMENT OF REUSABLE CONTROLLED MATERIAL	C.Y.	400	400
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	L.F.	75	75
0204210 A	HANDLING CONTAMINATED GROUNDWATER	L.S.	L.S.	L.S.
0205005 A	TRENCH EXCAVATION 0-15' DEEP	C.Y.	1640	1640
0205006 A	ROCK IN TRENCH EXCAVATION 0'-15' DEEP	C.Y.	80	80
0209001	FORMATION OF SUBGRADE	S.Y.	1100	1100
0212000	SUBBASE	C.Y.	305	305
0219001	SEDIMENTATION CONTROL SYSTEM	L.F.	240	240
0286001.10	ROCK IN DRAINAGE TRENCH EXCAVATION 0'-10' DEEP	C.Y.	10	10
0406170	HMA S1	TON	335	335
0406171	HMA S0.5	TON	280	280
0406194 A	JOINT AND CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT	L.F.	75	75
0406236	MATERIAL FOR TACK COAT	GAL.	200	200
0586006.10	TYPE "C" CATCH BASIN DOUBLE GRATE TYPE 2 (4' SUMP) - 0'-10' DEEP	EA.	2	2
0686000.12	12" R.C. PIPE (0'-10') DEEP	L.F.	30	30
0686000.18	18" R.C. PIPE (0'-10') DEEP	L.F.	35	35
0686000.30	30" R.C. PIPE (0'-10') DEEP	L.F.	25	25
0686100.15	15" C.C.M PIPE (0'-10') DEEP	L.F.	15	15
0813021	6" GRANITE STONE CURBING	L.F.	280	280
0813451	GRANITE STONE TRANSITION CURBING	L.F.	90	90
0815001	BITUMINOUS CONCRETE LIP CURBING	L.F.	375	375
0822100.01	TEMPORARY TRAFFIC BARRIER	L.F.	140	140
0913000	REMOVE CHAIN LINK FENCE	L.F.	210	210
0913011	5' CHAIN LINK FENCE	L.F.	130	130
0921001	CONCRETE SIDEWALK	S.F.	2855	2855
0922500	BITUMINOUS CONCRETE DRIVEWAY (COMMERCIAL)	S.Y.	720	720
0924002	CONCRETE DRIVEWAY RAMP	C.Y.	30	30
0944000	FURNISHING AND PLACING TOPSOIL	S.Y.	590	590
0950005	TURF ESTABLISHMENT	S.Y.	590	590
0969062 A	CONSTRUCTION FIELD OFFICE (MEDIUM)	MO.	18	18
0971001 A	MAINTENANCE AND PROTECTION OF TRAFFIC	L.S.	L.S.	L.S.
0975004	MOBILIZATION AND PROJECT CLOSEOUT	L.S.	L.S.	L.S.
0976002	BARRICADE WARNING LIGHT-HIGH INTENSITY	DAY	2160	2160

ROADWAY ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL	TOTAL
0977001	TRAFFIC CONE	EA.	12	12
0978002	TRAFFIC DRUM	EA.	12	12
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	14	14
0980020	CONSTRUCTION SURVEYING	L.S.	L.S.	L.S.
1206023 A	REMOVAL AND RELOCATION OF EXISTING SIGNS	L.S.	L.S.	L.S.
1208931	SIGN FACE SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)	S.F.	35	35
1209005	PAINTED PAVEMENT MARKING - 4" WHITE	L.F.	235	235
1210102	4" YELLOW EPOXY RESIN PAVEMENT MARKINGS	L.F.	630	630
1220027	CONSTRUCTION SIGNS	S.F.	445	445
1301082 A	8" DUTILE IRON PIPE (WATER MAIN)	L.F.	280	280
1302004 A	8" GATE VALVE	EA.	3	3
1303198 A	HYDRANT WATER MAIN	EA.	1	1
1303201 A	RELOCATE HYDRANT (COMPLETE)	EA.	1	1
1401246 A	16" DUCTILE IRON PIPE (SANITARY SEWER)	L.F.	200	200
1401260 A	27" DUCTILE IRON PIPE (SANITARY SEWER)	L.F.	10	10
1401261 A	30" DUCTILE IRON PIPE (SANITARY SEWER)	L.F.	180	180
1401675 A	SANITARY MANHOLE (6' DIA) 10' TO 20' DEEP	EA.	5	5
1403115 A	INVERTED SIPHON INLET CHAMBERS (SANITARY SEWER)	EA.	1	1
1403116 A	INVERTED SIPHON OUTLET CHAMBERS (SANITARY SEWER)	EA.	1	1

STRUCTURE ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL	TOTAL
0202216 A	EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL	C.Y.	150	150
0203202	STRUCTURE EXCAVATION - EARTH (EXCLUDING COFFERDAM AND DEWATERING)	C.Y.	4130	4130
0203204	STRUCTURE EXCAVATION - ROCK (EXCLUDING COFFERDAM AND DEWATERING)	C.Y.	200	200
0204151 A	HANDLING WATER	L.S.	L.S.	L.S.
0216000	PERVIOUS STRUCTURE BACKFILL	C.Y.	4070	4070
0406171	HMA S0.5	TON	45	45
0406173	HMA S0.25	TON	15	15
0406236	MATERIAL FOR TACK COAT	GAL	30	30
0503001	REMOVAL OF SUPERSTRUCTURE	L.S.	L.S.	L.S.
0601062	FOOTING CONCRETE	C.Y.	325	325
0601064	ABUTMENT AND WALL CONCRETE	C.Y.	255	255
0601088 A	CONCRETE FORM LINERS	S.F.	555	555
0601121	PARAPET CONCRETE	L.F.	35	35
0601122	BRIDGE SIDEWALK CONCRETE	C.Y.	60	60
0601502	1/2" PREFORMED EXPANSION JOINT FILLER FOR BRIDGES	S.F.	415	415
0601541 A	24" X 11' PRECAST CONCRETE BOX CULVERT	L.F.	52.5	52.5
0601542 A	12' X 10' PRECAST CONCRETE BOX CULVERT	L.F.	52.5	52.5
0602030	DEFORMED STEEL BARS-GALVANIZED	LBS.	90000	90000
0602936 A	DRILLING AND GROUTING REINFORCING BARS	L.F.	160	160
0602889	DOWEL BAR SPLICER SYSTEM GALVANIZED	EA.	45	45
0606906 A	REBUILD MASONRY WALL	C.Y.	10	10
~~0610002~~	~~DRILLING HOLES AND BONDING DOWELS~~	~~EA.~~	~~60~~	~~60~~
0707001 A	MEMBRANE WATERPROOFING (WOVEN GLASS FABRIC)	S.Y.	175	175
0708001	DAMPPROOFING	S.Y.	360	360
0714999 A	MONITORING STRUCTURES	L.S.	L.S.	L.S.
0716000 A	TEMPORARY EARTH RETAINING SYSTEM	S.F.	15840	15840
0717000	TEMPORARY EARTH RETAINING SYSTEM LEFT IN PLACE	S.F.	7620	7620
0728008 A	3/8" CRUSHED STONE	C.Y.	275	275
0755014	GEOTEXTILE (SEPARATION - HIGH SURVIVABILITY)	S.Y.	945	945
0817006 A	6" X 10" GRANITE STONE CURBING FOR BRIDGES	L.F.	100	100
0819002 A	PENETRATING SEALER PROTECTIVE COMPOUND	S.Y.	150	150
0904051 A	3 TUBE CURB MOUNTED BRIDGE RAIL	L.F.	100	100
0974001	REMOVAL OF EXISTING MASONRY	C.Y.	470	470
1504010 A	TEMPORARY SUPPORT OF UTILITIES	L.S.	L.S.	L.S.

1 1 1

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NO.	DATE	DESCRIPTION
1	1/19/2024	ADD / REMOVE ITEM

REVISIONS

SUPV.	J.A.C.
DESIGN	K.O.E., M.R.G.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/17/2022

WMC CONSULTING ENGINEERS

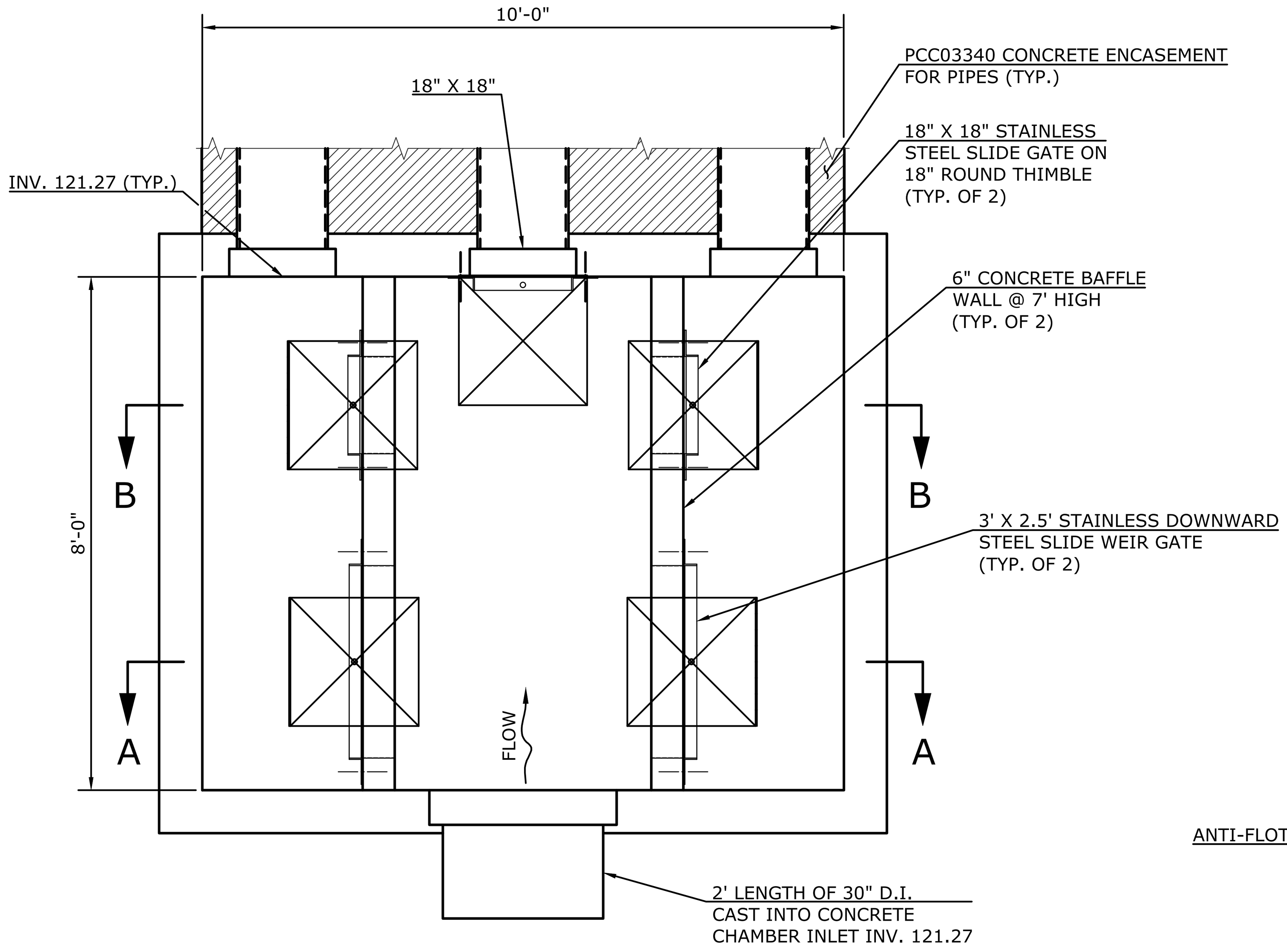
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

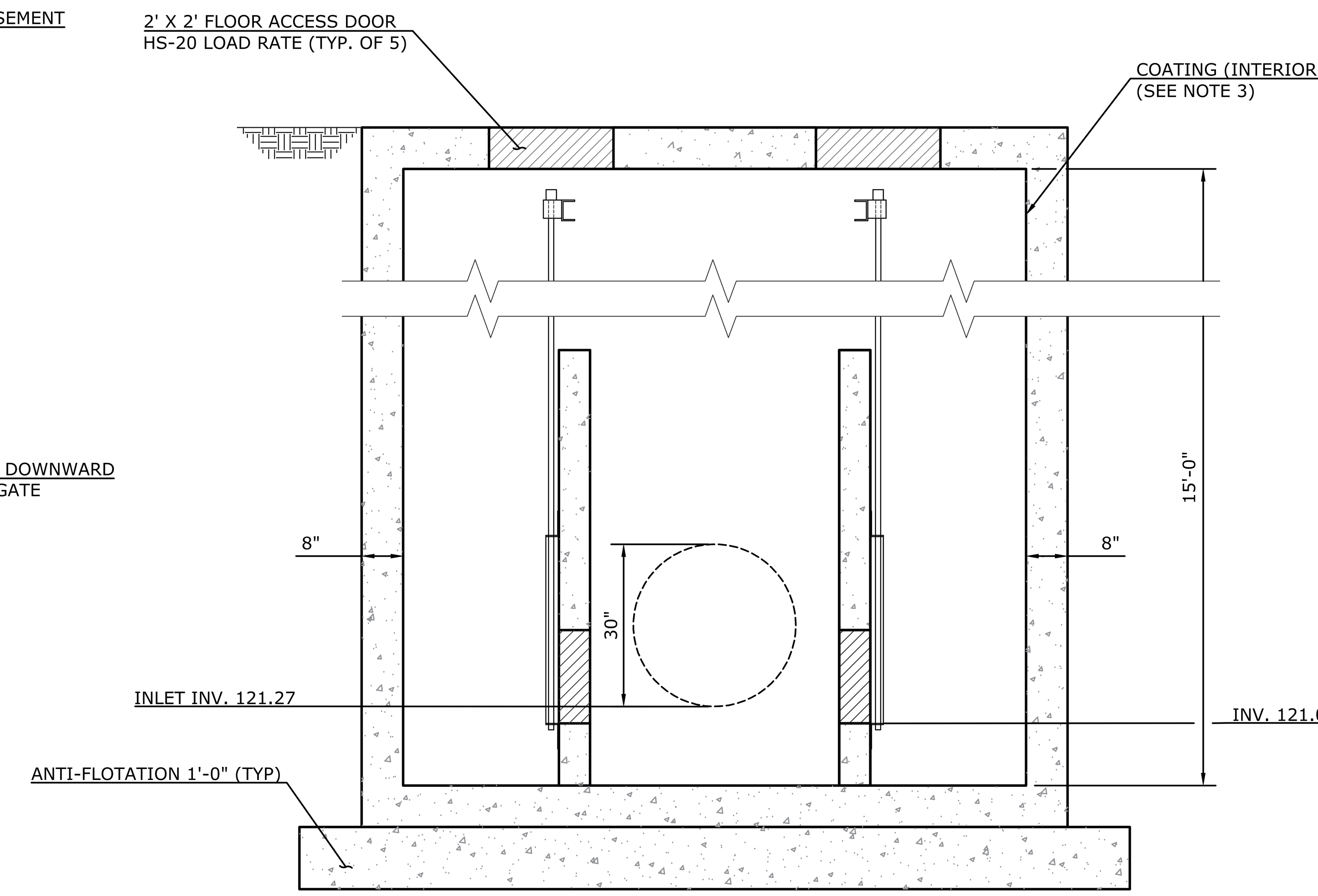
REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
DETAILED ESTIMATE SHEET

D – CENTER STREET – D.C.D. – 00056.55 –
SIZE PROJECT FILE NAME NUMBER REV.



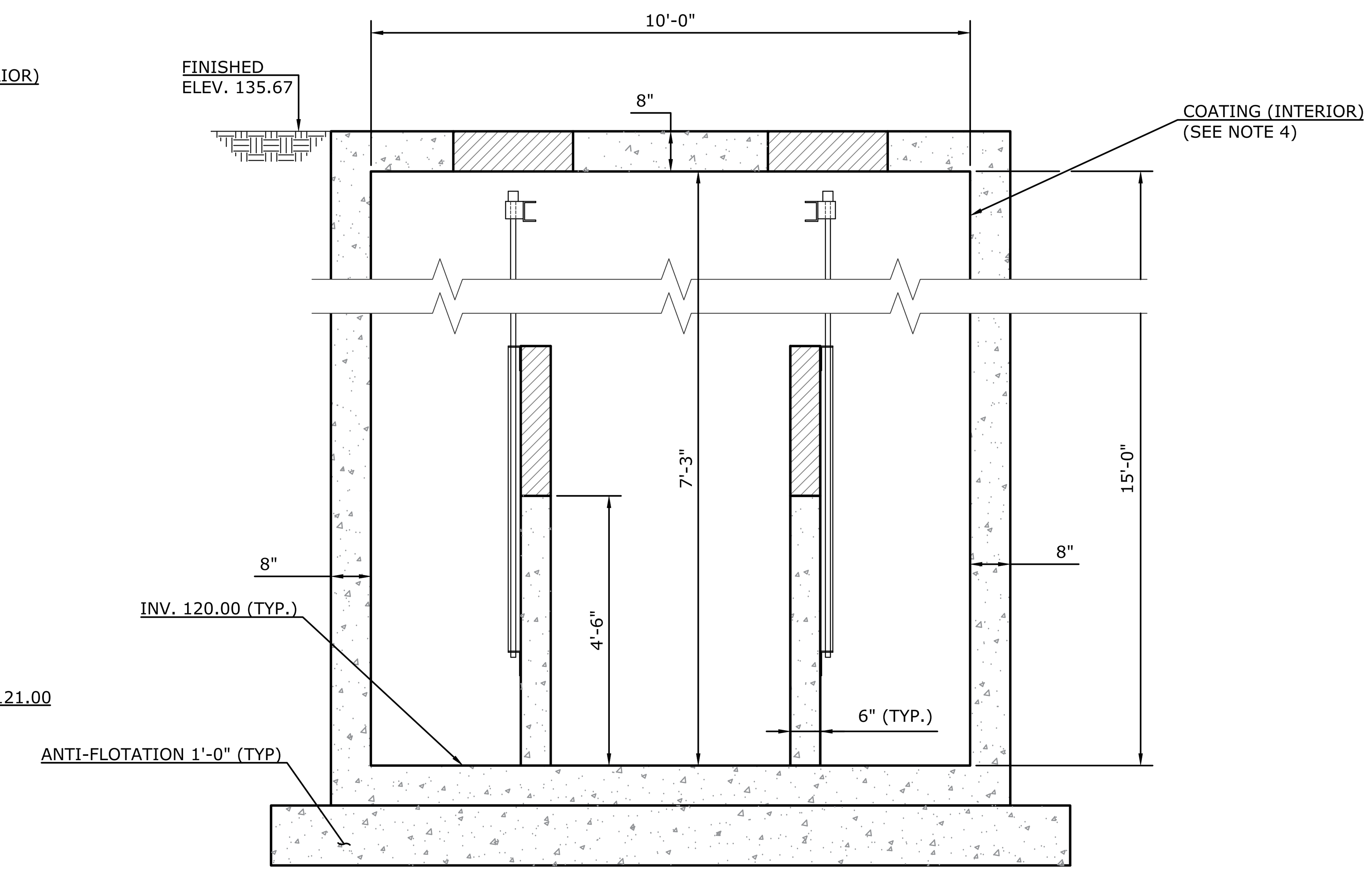
INLET PLAN

SCALE: 1/2" = 1'-0"



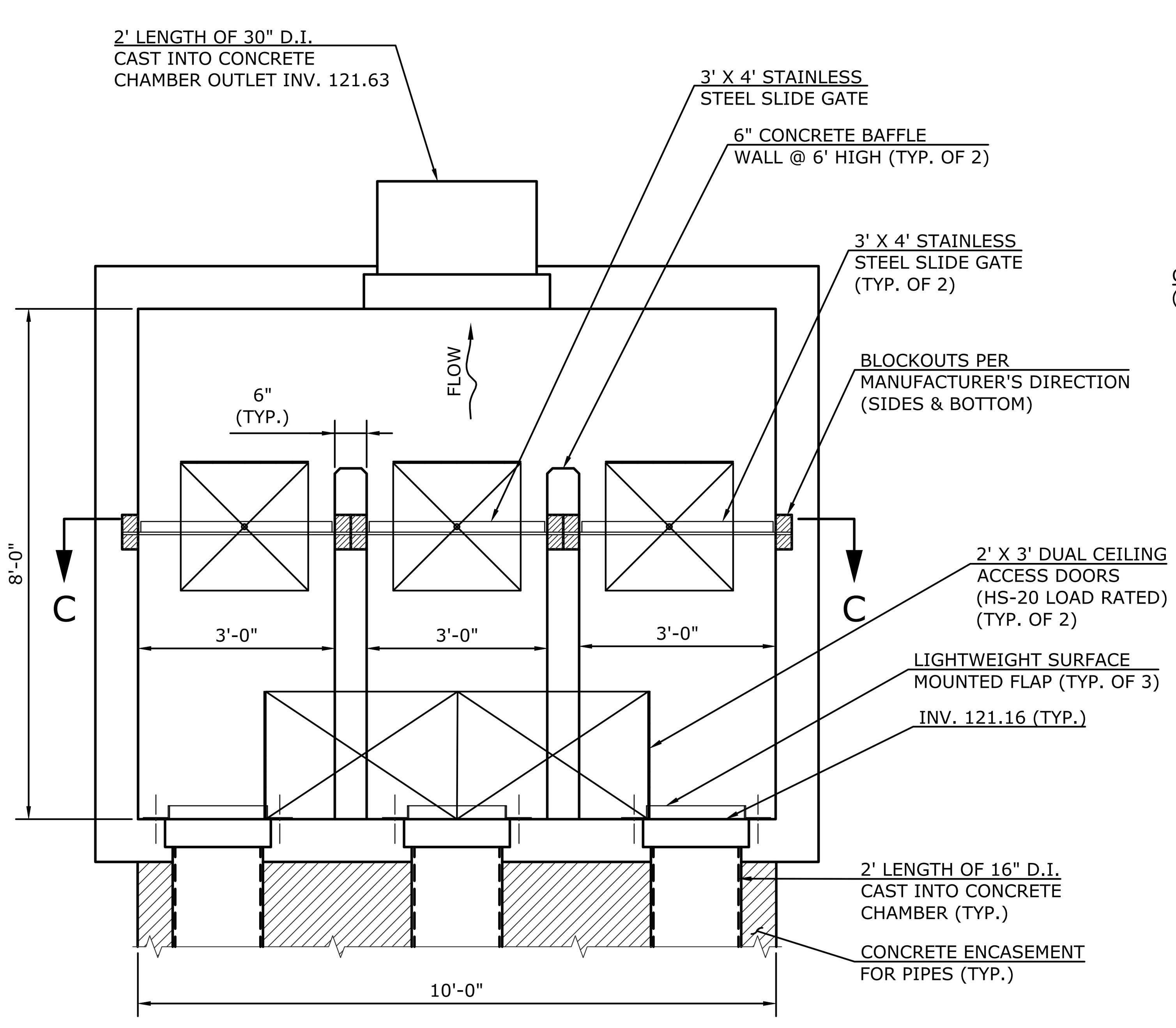
INLET ELEVATION PLAN SECTION B-B

SCALE: 1/2" = 1'-0"



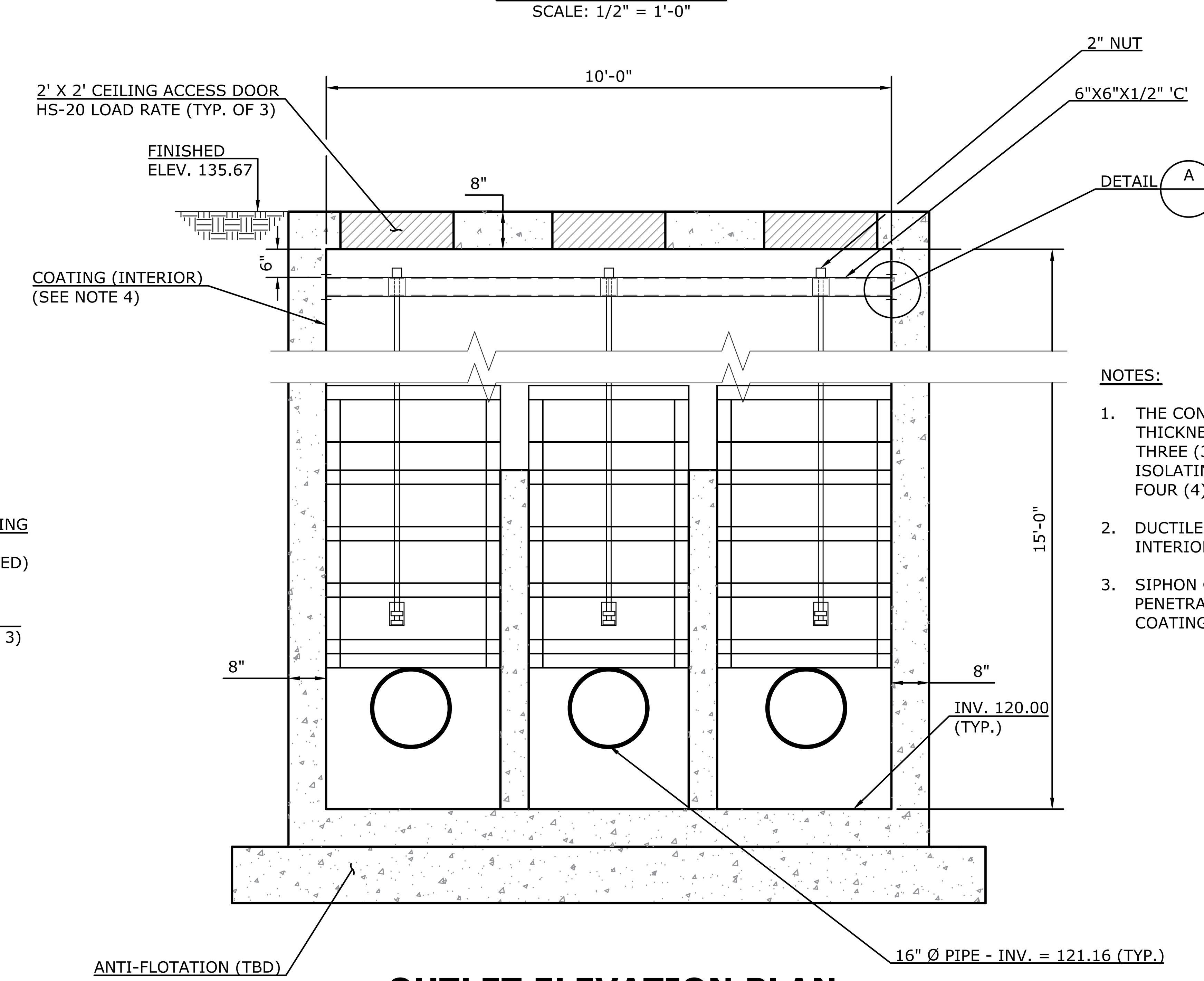
INLET ELEVATION PLAN SECTION A-A

SCALE: 1/2" = 1'-0"



OUTLET PLAN

SCALE: 1/2" = 1'-0"

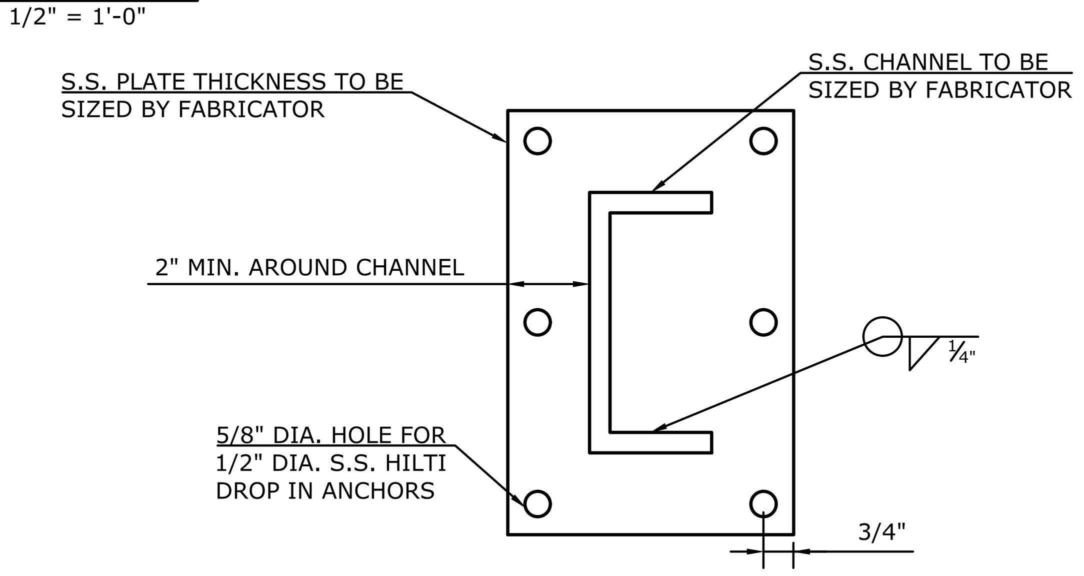


OUTLET ELEVATION PLAN SECTION C-C

SCALE: 1/2" = 1'-0"

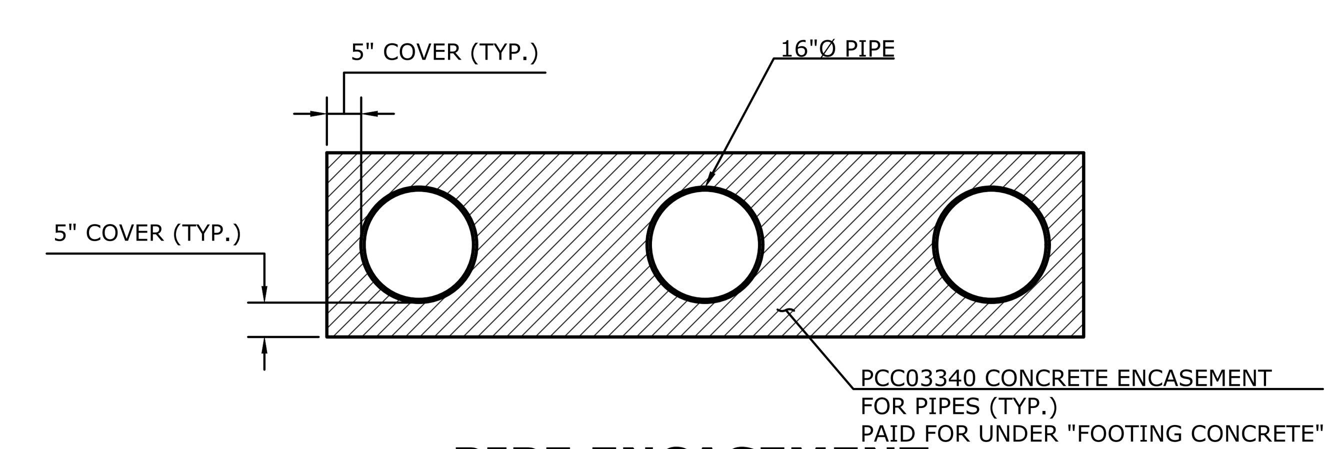
NOTES:

1. THE CONTRACTOR IS TO ENSURE THAT THE GUIDEWALL THICKNESS IN THE OUTLET SIPHON CHAMBER ALLOW FOR THREE (3) EQUAL WIDTH STOP GATES TO BE USED FOR ISOLATING SIPHON PIPES. THE CONTRACTOR SHALL FURNISH FOUR (4) STOP GATES. ONE SPARE DELIVERED TO THE TOWN.
2. DUCTILE IRON GRAVITY SEWER PIPE IS TO BE FURNISHED WITH INTERIOR CERAMIC EPOXY COATING.
3. SIPHON CHAMBERS ARE TO BE PROVIDED WITH INTERIOR AND PENETRATIONS HAVING A CORROSION INHIBITING EPOXY COATING.



END PLATE MOUNTING DETAIL "A"

SCALE: 3" = 1'-0"



PIPE ENCASEMENT SECTION

SCALE: 1/2" = 1'-0"

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NO.	DATE	DESCRIPTION
1	1/19/2024	SHEET REVISED

REVISIONS

SUPV.	J.A.C.
DESIGN	M.E.F.
DRAWN	M.R.G.
CHECKED	K.O.E.
DATE	03/17/2022

WMC CONSULTING ENGINEERS

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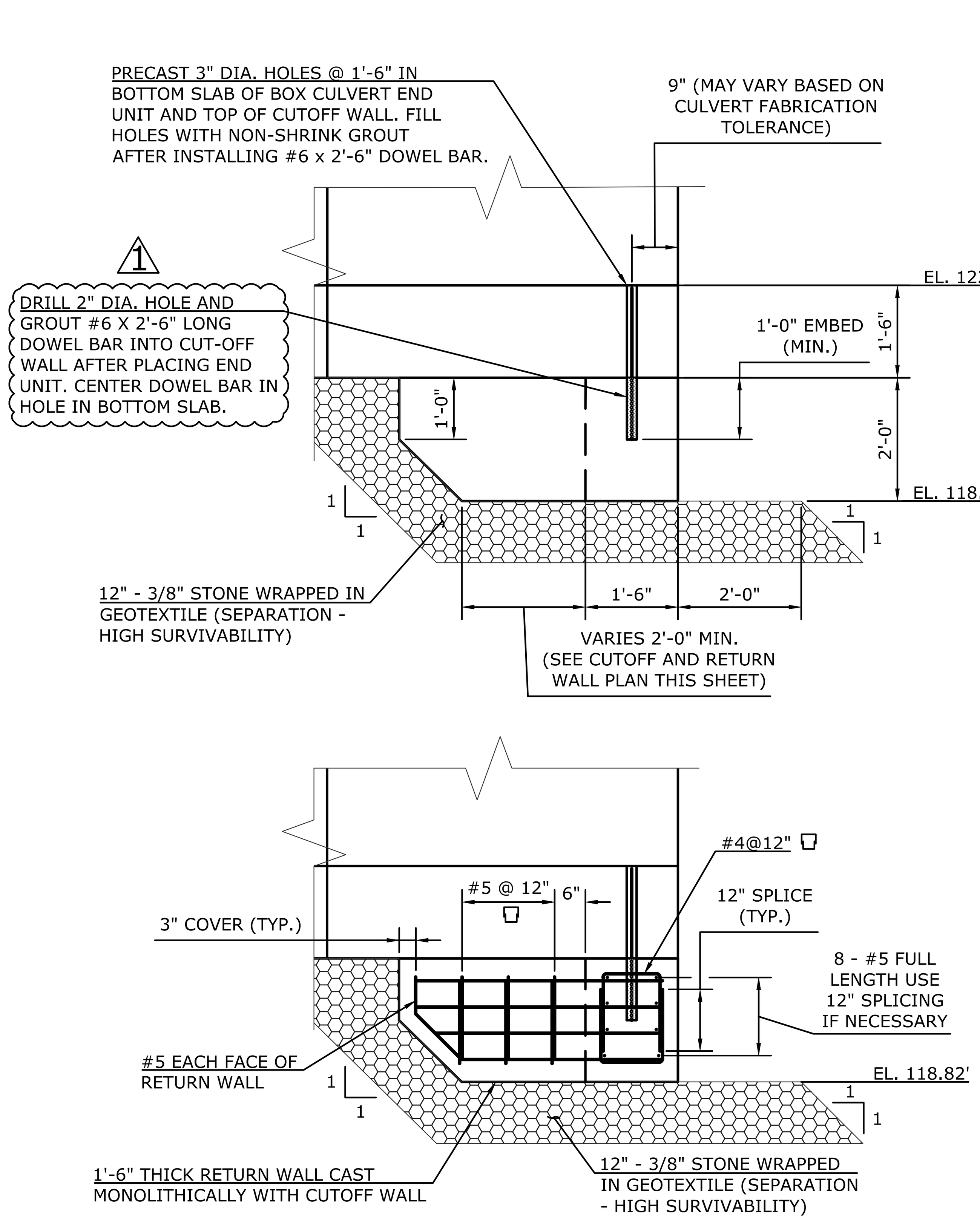
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

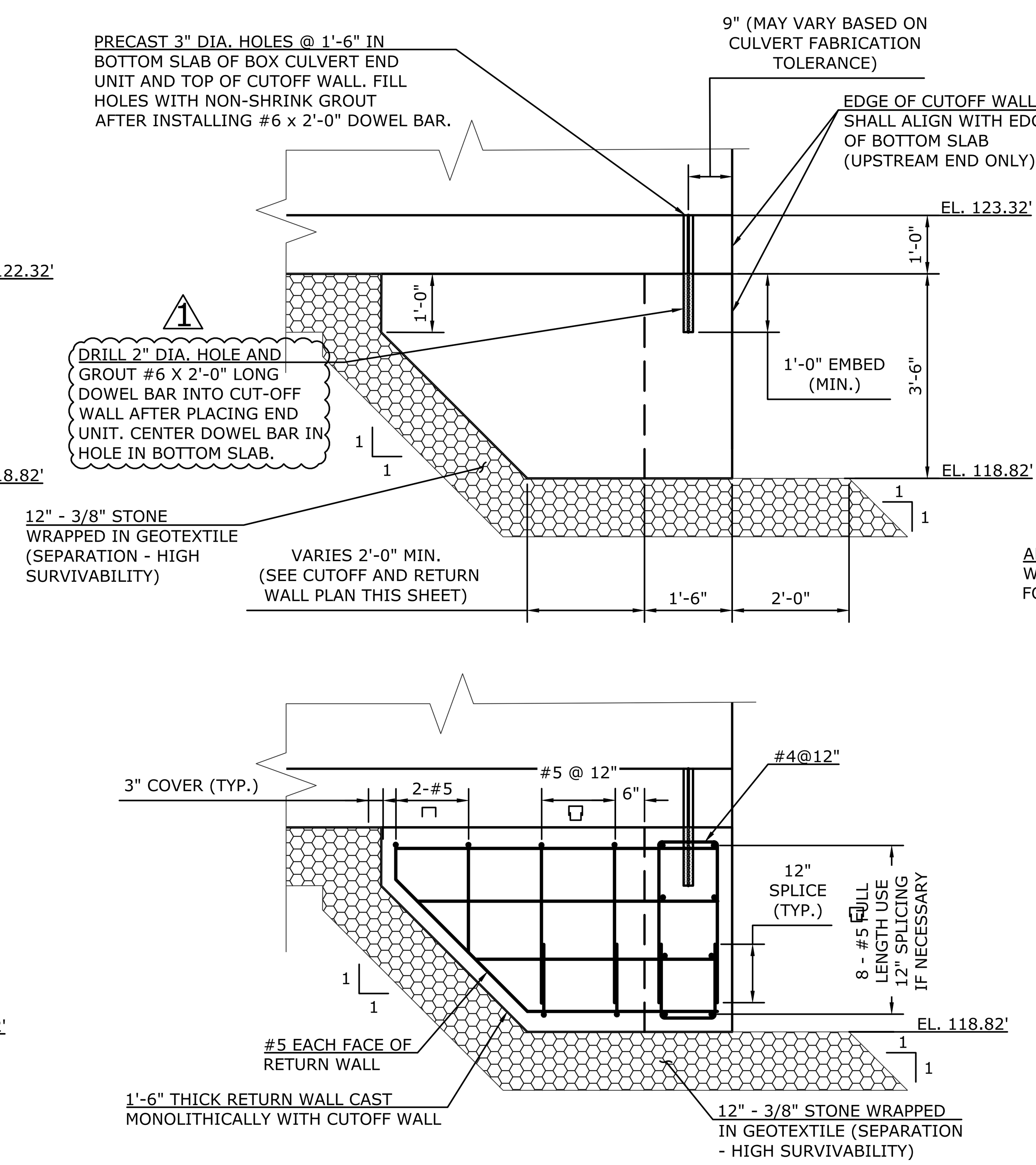
REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
SANITARY SEWER SIPHON DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET
D	CENTER STREET	D.C.D.	00056.55		13 OF 40



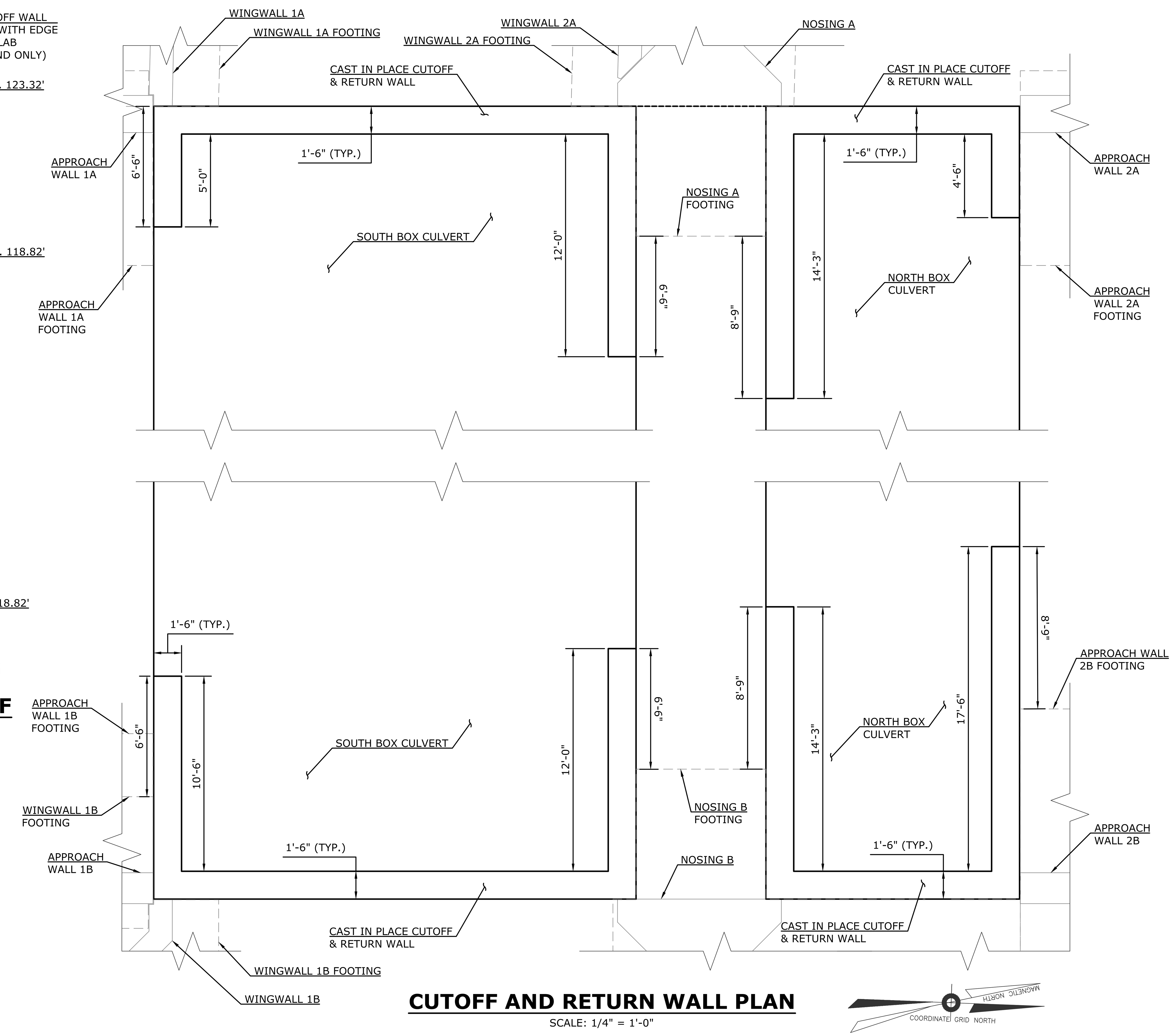
SOUTH CULVERT CAST IN PLACE CUTOFF AND RETURN WALL DETAILS

SCALE 1/2" = 1'-0"



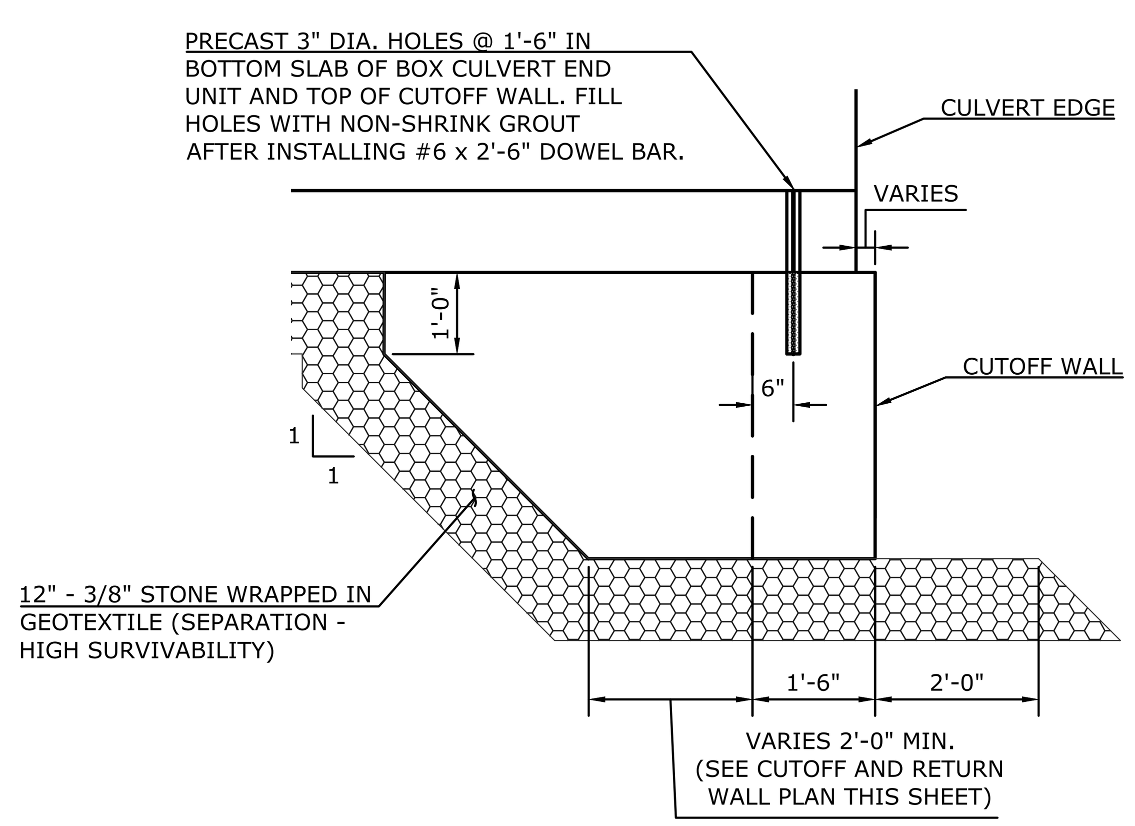
NORTH CULVERT CAST IN PLACE CUTOFF AND RETURN WALL DETAILS

SCALE 1/2" = 1'-0"



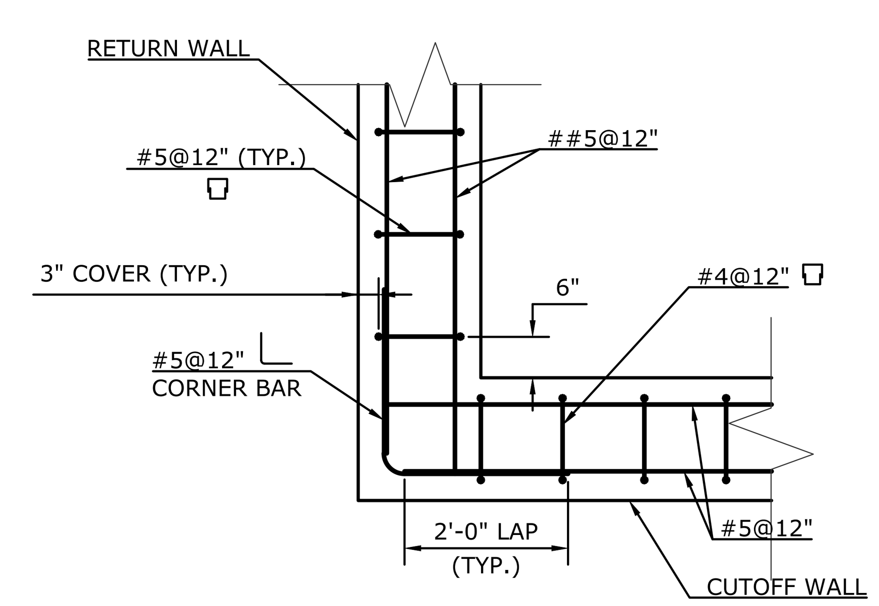
CUTOFF AND RETURN WALL PLAN

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



CULVERT CAST IN PLACE CUTOFF AND RETURN WALL DETAILS (DOWNSTREAM END)

SCALE 1/2" = 1'-0"



CULVERT CAST IN PLACE CUTOFF AND RETURN WALL CORNER DETAIL

SCALE 1/2" = 1'-0"

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NO.	DATE	DESCRIPTION
1	1/19/2024	CALLOUT REVISED

REVISIONS

SUPV.	J.A.C.
DESIGN	S.A. & K.K.
DRAWN	D.R.B.
CHECKED	K.O.E.
DATE	03/17/2022

WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
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PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
CUTOFF AND RETURN WALL PLAN & DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET
D	CENTER STREET	D.C.D.	00056.55	–	36 OF 40

CITY OF MERIDEN, CONNECTICUT
SCHEDULE OF PRICES FOR THE CONSTRUCTION OF CITY PROJECT NO. B024-22
STATE PROJECT NO. 79-212, FAP NO. H020(001)
REPLACEMENT OF CENTER STREET BRIDGE (BRIDGE NO. 04185) OVER HARBOR BROOK
CITY OF MERIDEN, CONNECTICUT

DATE OF
BID OPENING **January 24, 2024** TIME: **11:00 A.M.** **NO BIDS WILL BE ACCEPTED AFTER 11:00 A.M. "NO EXCEPTIONS"**

Note: --- The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

ITEM NO.		ITEM	UNIT	QUANTITIES	FIGURES	WRITTEN	(FIGURES)
0020763	A	Disposal of Sediments	Ton	100			
0101000	A	Environmental Health and Safety	L.S.	1			
0101117	A	Controlled Material Handling	C.Y.	9190			
0101128	A	Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area	L.S.	1			
0101130	A	Environmental Work –Solidification	Ton	780			
0201001		Clearing and Grubbing	L.S.	1			
0201199	A	Remove and Reset Fence	L.F.	385			
0202000		Earth Excavation	C.Y.	3425			
0202100		Rock Excavation	C.Y.	165			
0202200		Channel Excavation-Earth	C.Y.	45			
0202216	A	Excavation and Reuse of Existing Channel Bottom Material	C.Y.	150			
0202217	A	Supplemental Streambed Channel Material	Est.	1	$ 15,000.00	Fifteen Thousand Dollars and Zero Cents	$ 15,000.00
0202315	A	Disposal of Controlled Material	Ton	18610			
0202318	A	Management of Reusable Controlled Material	C.Y.	400			
0202529		Cut Bituminous Concrete Pavement	L.F.	75			
0203202		Structure Excavation - Earth (Excluding Cofferdam and Dewatering)	C.Y.	4130			
0203304		Structure Excavation - Rock (Excluding Cofferdam and Dewatering)	C.Y.	200			
0204151	A	Handling Water	L.S.	1			
0204213	A	Handling Contaminated Groundwater	L.S.	1			
0205005	A	Trench Excavation 0'-15' Deep	C.Y.	1640			
0205006	A	Rock in Trench Excavation 0'-15' Deep	C.Y.	80			
0209001		Formation of Subgrade	S.Y.	1100			
0212000		Subbase	C.Y.	305			
0216000		Pervious Structure Backfill	C.Y.	4070			
0219001		Sedimentation Control System	L.F.	240			
0286001.10		Rock in Drainage Trench Excavation 0'-10' Deep	C.Y.	10			
0406170		HMA S1	Ton	335			
0406171		HMA S0.5	Ton	325			
0406173		HMA S0.25	Ton	15			
0406194	A	Joint and Crack Sealing of Bituminous Concrete Pavement	L.F.	75			
0406236		Material for Tack Coat	Gal.	230			
0503001		Removal of Superstructure	L.S.	1			
0586006.10		Type 'C' Catch Basin Double Grate Type 2 (4' Sump) 0'-10' Deep	Ea.	2			

0601062		Footing Concrete	C.Y.	325			
0601064		Abutment and Wall Concrete	C.Y.	255			
0601088	A	Concrete Form Liners	S.F.	555			
0601121		Parapet Concrete	L.F.	35			
0601122		Bridge Sidewalk Concrete	C.Y.	60			
0601502		1/2" Preformed Expansion Joint Filler For Bridges	S.F.	415			
0601541	A	24' X 11' Precast Concrete Box Culvert	L.F.	52.5			
0601542	A	12' X 10' Precast Concrete Box Culvert	L.F.	52.5			
0602030		Deformed Steel Bars-Galvanized	Lbs.	90000			
0602889		Dowel Bar Splicer System Galvanized	Ea.	45			
0602936		Drilling and Grouting Reinforcing Bars	L.F.	160			
0606906	A	Rebuild Masonry Wall	C.Y.	10			
~~0610002~~		~~Drilling Holes and Bonding Dowels~~	~~Ea.~~	~~60~~		~~Deleted item~~	
0686000.12		12" R.C. Pipe (0'-10') Deep	L.F.	30			
0686000.18		18" R.C. Pipe (0'-10') Deep	L.F.	35			
0686000.30		30" R.C. Pipe (0'-10') Deep	L.F.	25			
0686100.15		15" C.C.M Pipe (0'-10') Deep	L.F.	15			
0707001	A	Membrane Waterproofing (Woven Glass Fabric)	S.Y.	175			
0708001		Dampproofing	S.Y.	360			
0714999	A	Monitoring Structures	L.S.	1			
0716000	A	Temporary Earth Retaining System	S.F.	15840			
0717000		Earth Retaining System Left in Place	S.F.	7620			
0728008	A	3/8" Crushed Stone	C.Y.	275			
0755014		Geotextile (Separation - High Survivability)	S.Y.	945			
0813021		6" Granite Stone Curbing	L.F.	280			
0813451		Granite Stone Transition Curbing	L.F.	90			
0815001		Bituminous Concrete Lip Curbing	L.F.	375			
0817006	A	6" X 10" Granite Stone Curbing for Bridges	L.F.	100			
0819002	A	Penetrating Sealer Protective Compound	S.Y.	150			
0822100.01		Temporary Traffic Barrier	L.F.	140			
0904051	A	3 Tube Curb Mounted Bridge Rail	L.F.	100			
0913000		Remove Chain Link Fence	L.F.	210			
0913011		5' Chain Link Fence	L.F.	130			
0921001		Concrete Sidewalk	S.F.	2855			
0922500		Bituminous Concrete Driveway (Commercial)	S.Y.	720			
0924002		Concrete Driveway Ramp	C.Y.	30			
0944000		Furnishing and Placing Topsoil	S.Y.	590			
0950005		Turf Establishment	S.Y.	590			
0969062	A	Construction Field Office (Medium)	Mo.	18			
0971001	A	Maintenance and Protection of Traffic	L.S.	1			
0974001		Removal of Existing Masonry	C.Y.	470			
0975004		Mobilization and Project Closeout	L.S.	1			
0976002		Barricade Warning Light-High Intensity	Day	2160			
0977001		Traffic Cone	Ea.	12			
0978002		Traffic Drum	Ea.	12			
0979003		Construction Barricade Type III	Ea.	14			
0980020		Construction Surveying	L.S.	1			

1206023	A	Removal and Relocation of Existing Signs	L.S.	1			
1208931		Sign Face – Sheet Aluminum (Type IX Retroreflective Sheeting)	S.F.	35			
1209005		Painted Pavement Marking - 4" White	L.F.	235			
1210102		4" Yellow Epoxy Resin Pavement Markings	L.F.	630			
1220027		Construction Signs	S.F.	445			
1301082	A	8" Dutile Iron Pipe (Water Main)	L.F.	280			
1302004	A	8" Gate Valve	Ea.	3			
1303198	A	Hydrant Water Main	Ea.	1			
1303201	A	Relocate Hydrant (Complete)	Ea.	1			
1401246	A	16" Ductile Iron Pipe (Sanitary Sewer)	L.F.	200			
1401260	A	27" Ductile Iron Pipe (Sanitary Sewer)	L.F.	10			
1401261	A	30" Ductile Iron Pipe (Sanitary Sewer)	L.F.	180			
1401675	A	Sanitary Manhole (6' Dia) 10' to 20' Deep	Ea.	5			
1403115	A	Inverted Siphon Inlet Chambers (Sanitary Sewer)	Ea.	1			
1403116	A	Inverted Siphon Outlet Chambers (Sanitary Sewer)	Ea.	1			
1504010	A	Temporary Support of Utilities	L.S.	1			
						TOTAL	

NAME OF BIDDER ____

ADDRESS ____

BY: ____

Print or type name____________________________________Title___________________________

SIGNATURE ____ DATE _______________

TELEPHONE ________________ FAX: __________________ E-Mail _______________________

ITEM #0714999A – MONITORING STRUCTURES

Description: Work under this item consists of performing condition surveys and monitoring of the existing buildings and other attached structures at the following properties:

1. 255 Center Street, Meriden

Work shall include, but not necessarily be limited to:

- Conduct pre- and post-construction condition surveys.
- Laying out, furnishing, installing, protecting, maintaining, monitoring, and preparing reports for all monitoring instrumentation: Crack Monitors, Deformation Monitoring Point, and Vibration Monitors.
- Replacement of failed, damaged or stolen instrumentation.
- Notifying the Engineer and taking immediate remedial action to prevent the Limiting Values from being reached. Meeting with the Engineer to review current field conditions to determine further steps to be taken, before exceeding the Limiting Values.
- Making adjustments to the demolition, temporary cofferdam, and pile installation means and methods in order not to exceed the Limiting Values.
- Removal of all monitoring instruments, Crack Monitors, Deformation Monitoring Points, and Vibration Monitors as specified herein, or as directed by the Engineer at the completion of construction activities.

Materials:

Crack Monitors: Crack monitors shall be two-piece acrylic plate type monitors with crosshairs on one piece and find grid on the other, mounted on each side of the crack with appropriate screws or quick setting epoxy as manufactured by Avongard Products, U.S.A., Ltd., Preservation Resource Group, Inc. (PRG), RST Instruments LTD or approved equal.

Deformation Monitoring Points (DMPs): These are to be used as targets in monitoring by conventional survey methods. The target shall be the head of a stainless or galvanized steel bolt drilled and grouted into the structure or other devices approved by the Engineer that will allow repeatable and reproducible elevation readings when measured with conventional survey equipment.

Vibration Monitors: Provide three-component seismographs or vibration monitors, capable of measuring and recording particle velocity data and frequency in three mutually perpendicular directions. The Contractor’s vibration specialist shall install, maintain, and calibrate the vibration monitoring instruments in accordance with the instrument manufacturer’s recommendations. Any instrument showing indication of damage, malfunction, or erratic functioning shall be immediately replaced with a calibrated, functioning instrument. One vibration monitoring device is required per building.

Below are the estimated numbers of monitoring devices required:

- Crack Monitors: Four (4)
- Deformation Monitoring Point: Eight (8)
- Vibration Monitors: One (1)

Construction Methods:

Pre and Post-Conditions Surveys and Crack Monitoring at each property: The Contractor shall engage the services of a qualified, independent professional, acceptable to the Engineer to conduct pre- and post construction surveys of the main building, and other attached structures at each of the properties. Work under this item includes furnishing all necessary labor, equipment and materials to perform the condition surveys and monitor cracks. The Engineer shall contact the property owners by certified letter to obtain permission for entry required for the work.

A pre-construction condition survey shall be completed and 5 copies of the survey and initial monitoring measurements submitted at least 10 days prior to the start of any demolition or pile installation, or at an earlier stage of construction if requested by the Engineer. Initial crack monitoring measurements are to be included in this report.

The pre-construction condition survey shall consist of a visual inspection, photograph and video documentation, and written description of the interior and exterior condition of the various structures examined with an emphasis on the foundation walls and any brick facade. Descriptions shall identify any existing cracks, damage, or other defects and shall include such information to make it possible to determine the effect, if any, of the construction operations on the defect. Where significant cracks or damage exists, or for defects too complicated to describe in words, photographs shall be taken and made part of the record. In addition, the significant cracks shall, with consent of the owner, be instrumented with crack monitors to record any movement of the crack. Where crack monitors are not installed, crack width measurements shall be made with suitable measuring devices. Initial crack monitoring measurements shall be recorded in the presence of Engineer and Owner. All parties shall sign the record copy of the form used to record the initial readings.

The initial record of each property examined shall be signed by the representatives present and, if practicable, by the Owners of the property, whether or not they are present at the examinations.

A post-construction condition survey will be conducted upon completion of all demolition or pile installation, or at a later date if requested by the Engineer.

The post-construction condition survey shall repeat the process used in the pre-construction survey, paying particular attention to any areas where complaints of damage have been received or damage claims have been filed. Notice shall be given to all interested parties so that they may be present during the post-construction condition survey. A form shall be provided to all representatives attending the post-construction survey showing the initial crack reading measurements and shall provide a location to record the final measurements. Crack monitors shall be read during the final examination and can be removed if no change is noted from the initial readings. If a change is noted, the crack gauge shall remain in place until approval is given by the Engineer to remove the crack monitor. Mounting hardware or adhesives shall be removed and the surface restored when the crack gauges are removed. Representatives present shall sign the record copy of the monitoring form used to record the final readings. Crack monitors shall not be removed until the Owner or Owner's representative signs the record copy of the form recording the final crack monitoring readings.

The final record of each property examined shall be signed by the representatives present and, if practicable, by the Owners of the property, whether or not they are present at the examinations.

The Contractor shall submit 5 copies of the pre- and post-construction condition surveys including all documentation to the Engineer within 10 days of the completion of the post- construction condition survey.

Monitoring Requirements:

A. Monitoring Instrumentation Installation:

1. Install the DMPs at the locations as directed by the Engineer. Locate Vibration Monitors next to the portion of the building closest to the vibration source or as directed by the Engineer.

2. Crack Monitor locations will be determined and installed as part of the pre-construction condition survey.

3. All DMPs and Crack Monitors shall be installed in the presence of the Engineer.

4. All DMPs and crack monitors shall be securely fixed at the approved locations and position, so that the instruments are capable of resisting disturbance from vandalism. Establish the initial elevation of DMPs to a precision of 1/8 inch.

5. The Engineer reserves the right to modify the DMP and Vibration Monitor layout as is deemed necessary to monitor the impact of the Contractor's proposed method of construction. The DMPs shall be arranged so that monitoring can continue until completion without interruption. Adequate access for maintenance and reading of the DMPs shall be provided.

B. Monitoring Schedule and Submittal:

1. All DMPs and Crack Monitors / crack measurement points shall be installed and initial readings completed with the Pre-construction condition survey as noted above.

2. In addition to the initial readings, DMPs and Crack Monitors / crack measurement points shall be monitored:

   - Prior to the start of and then at least weekly when demolishing structures, installation/removal of any sheet piling or pile installation within 100 feet of the building.

   - Five days before, the day before, and then daily when demolishing structures, installation/removal of any sheet piling or pile installation within 50 feet of the building.

   - Before and after each pile is installed, installation/removal of any sheet piling within 30 feet of the building.

   - One week after completion of all structure demolition, installation/removal of any sheet piling and pile installation within 100 feet of the building, and then weekly until there is no change in readings.

   The Engineer may increase the frequency of monitoring at no additional cost should there be any changes in the measurements or other indications of movement.

   Measurements shall be submitted on a form showing both the past and current measurements. A hard copy of the form with any changes from the previous days measurements circled shall be given to the Engineer by the morning after the day the readings were taken. A typed and signed form shall be submitted on a weekly basis during periods requiring monitoring, unless the Engineer approves submittal less frequently.

3. The Contractor shall monitor construction induced vibrations continuously when demolishing substructure using impact methods, installing piles within 30 feet of the buildings. If monitoring results associated with construction activities at certain distances from the buildings result in readings less than 25 percent of the limiting values, the Engineer solely at his discretion may reduce the continuous monitoring requirement.

4. The Contractor's vibration specialist shall maintain a log of all vibration producing activities for which ground vibrations were monitored. The vibration monitoring log shall include the recorded maximum peak particle velocity and the associated frequency and the date and time for each event recorded and the type

and location of the vibration producing activity, location of monitoring instruments, and the closest distance from the vibration producing activity to the monitoring instrument. In addition to immediate verbal notifications of significant vibrations, the vibration specialist shall submit weekly reports of vibration monitoring to the Engineer during periods when such monitoring is required. The monitoring reports shall include the vibration monitoring record data, a location plan showing areas of construction activity and monitoring locations, and a written narrative summarizing the vibration monitoring performed and the results.

C. The Contractor shall respond to the monitored readings from instrumentation as follows:

1. Implement remedial action if readings approach the Limiting Values of 1/8 inch for DMPs, 1/8 inch for Crack Monitors / crack measurement points, and a peak particle velocity (i.e. ground vibrations) immediately adjacent to a vibration monitoring locations of 0.25 inch per second. The term "peak particle velocity" shall be considered to mean the resultant vector sum of particle velocities in three mutually perpendicular directions at any instant in time.

2. Take all necessary steps so that the limiting values are not exceeded. The Contractor may be directed to suspend activities in the affected area with the exception of those actions necessary to avoid exceeding the limiting value.

3. If any readings exceed 50 percent of the Limiting Values, the Contractor shall:

   a. Halt operations that are causing the instrument response values to reach 50 percent of the Limiting Value.

   b. Meet with the Engineer to discuss response actions.

   c. Implement the reviewed plan of action, which includes modifications to the Contractor means and methods necessary to reduce the potentially damaging effects of the construction activities such that the Limiting Values are not reached.

D. Damage to Instrumentation:

1. The Contractor shall protect all DMPs, Crack Monitors, and Vibration Monitors from damage due to construction operations, weather, and vandalism.

2. If an instrument is damaged or unusable, the Contractor's instrumentation personnel shall replace the damaged DMP or Crack Monitor within 72 hours, at no additional cost to the Town. The Engineer will be the sole judge of work

stoppage in the vicinity of the damaged or unusable instrument until it is again operational, at no additional cost to the Town.

E. Removal of Instruments:

1. Prior to completion of the Contract, the Contractor shall remove all above instrumentation and restore the surface to the Owner’s satisfaction.

2. All instruments or portions hereof removed by the Contractor shall become the property of the Contractor.

Method of Measurement: Within sixty (60) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for approval a cost breakdown of his lump sum bid prices for this item. The submission must include substantiation showing that the cost breakdowns submitted are reasonable based on the Contractor's lump sum bids. The cost breakdown shall be in accordance with the following payment schedule:

Pre-Construction Surveys: The cost to develop and perform pre-construction surveys meeting site requirements. The cost shall not exceed 20 percent of the lump sum value.

Furnishing and Installation of Monitoring Devices: The cost to procure and install all required devices at each property. The cost shall not exceed 20 percent of the lump sum value.

Monitoring and Maintenance of Devices: The number of months and monthly cost to perform the required monitoring and prepare documentation at each property. The cost shall be a minimum of 40 percent of the lump sum value.

Post-Construction Surveys and Removal of Monitoring Devices: The cost to perform the post-construction surveys and remove monitoring devices at each property. The cost shall be a minimum of 5 percent of the lump sum value.

Basis of Payment: This work will be paid for at the contract lump sum price for “Monitoring Structures” which price shall include all materials, tools, equipment and labor for the required work at each property including: the services of an independent professional to perform the pre- and post-construction surveys; furnishing, installation, monitoring, and removal of crack monitor gauges/measurement points and DMPs; furnishing, installation, monitoring, and removal of instrumentation to record vibration; preparation of reports; notification of the Engineer of any reading which reach 50 percent of the Limiting Values.

<u>Pay Item</u>	<u>Pay Unit</u>
Monitoring Structures	LS

City of Meriden, Connecticut
Inland Wetlands and Watercourse Commission
City Hall
142 East Main Street
Meriden, Connecticut 06450
203-630-4081

November 20, 2018

City of Meriden
Howard Weissberg, Director of Public Works
142 East Main Street
Meriden, Ct 06450

RE: Application of City of Meriden for the installation of a 24' x 11' and 12'x10' box culvert, sanitary lines, drainage outfalls, and associated channel work at Center St Bridge No. 04185 over Harbor Brook.

Salutations,

At its regular meeting meeting of November 7, 2018 the Meriden Inland Wetlands and Watercourse Commission approved with the application of the City of Meriden for the installation of a 24' x 11' and 12'x10'box culvert, sanitary lines, drainage outfalls, and associated channel work at Center St Bridge No. 04185 over Harbor Brook.

Vice Chairman's Pandiani's motion to approve the application was seconded by Secretary Uhrig and passed unanimously. (6-0)

Should you have any questions, please contact this office.

Best regards,

Paul A. Dickson
Associate City Planner
Inland Wetland Agent

Cc: Brian Ennis, Engineering Dept

Connecticut Department of Energy and Environmental Protection License*

Flood Management Certification Approval

Licensee(s):	Connecticut Department of Transportation
Licensee Address(s):	2800 Berlin Turnpike Berlin, CT 06131
License Number(s):	201815843-FM
Municipality:	Meriden
Project Description:	DOT Project No. 79-212, Replacement of Center Street Bridge over Harbor Brook
Project Address/Location:	Center Street over Harbor Brook
Waters:	Harbor Brook
Authorizing CT Statute(s) and/or Federal Law:	CGS Section 25-68b to h
Applicable Regulations of CT State Agencies:	25-68h-1 to 3
Agency Contact:	Land & Water Resources Division, Bureau of Water Protection & Land Reuse, 860-424-3019
License Expiration:	Five (5) years from the date of issuance of this license.
Project Site Plan Set:	*Environmental Permit Plans, State Project No. 79-212, Replacement of Center Street Bridge over Harbor Brook, Meriden,* prepared by WMC Consulting Engineers and dated October 17, 2018 (sheets 1-7) and the *City of Meriden, Connecticut, Plan for Replacement of Center Street Bridge over Harbor Brook, State Project # 79-212,* prepared by WMC Consulting Engineers and dated January 28, 2019 (sheets 1-32).
License Enclosures:	LWRD General Conditions, Compliance Certification Form

*Connecticut's Uniform Administrative Procedure Act defines License to include, "*the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . .*"

Authorized Activities:

The Licensee is hereby authorized to conduct the following work as described in application # 201815843-FM and as depicted on any site plan sheets / sets cited herein:

1. Remove and replace an existing 24.5-foot clear span arch masonry bridge structure and associated wing walls.
2. Install and construct a two precast concrete box culverts, one of 24-feet by 11 feet and the other 12-feet by 10-feet and their associated wing walls.
    a. Place 3-feet of native stream bed material inside the 24-foot by 11-foot box culvert.
    b. Install steel plates to cover both ends of the 12-foot by 11-foot box culvert opening and backfill to existing grades.
    c. Remove and relocate utilities (gas, electric, water and communications) within the bridge and road reconstruction limits. Remove, relocated and install a new 30-inch ductile iron sewer pipe (syphon). Remove and replace an existing 8-inch water main.
3. Install new storm drainage piping, two new 4-foot sump catch basins and an 18-inch (RCP) drainage outfall pipe for discharging stormwater to Harbor Brook.
4. Install and construct water handling system as detailed in the water handling plans; stage 1, stage 2 and stage 3 on permit plan sheets 6 and 7 dated November 30, 2018 and plan sheets 18 and 19 of the contract plans dated January 28, 2019.
5. Reconstruct the Center Street roadway and the adjacent parking area.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
2. **Native Streambed Material:** The native stream bed material excavated during the bridge reconstruction activities shall be stockpiled and then used as the fill material within the new bridge structure. The stockpiled material shall be located outside of wetland and floodplain limits and protected using appropriate sedimentation and erosion control measures.
3. **Dewatering Activities.** Effluent from dewatering work areas should not be discharged directly to watercourse and must processed through treatment structures. Such structures should not be located within the stream channel r adjacent to wetlands.
4. **Erosion and Sedimentation Control.** Any cut and fill area with slope of 2:1 or greater, shall be stabilized and covered until permanent ground cover is established.
5. **Harbor Brook Master Plan.** The steel plates placed at the inlet and outlet of the 12-foot by 10-foot concrete box culvert shall remain in place until future work is completed pertaining to the Harbor Brook Flood Control and Linear Trail Master Plan and to meet the terms of 201101871-DIV, 201101872-WQC issued to the City of Meriden on June 26, 2012.

6. **Future culvert and channel work.** When the steel plates are removed at a future date, the native streambed material shall be placed at a depth of 1 foot inside the 12-foot by 10-foot culvert. At this time, the streambed material in the 24-foot by 11-foot culvert may be reduced to a depth of 1-foot.

7. **Road Barricade and Flood Warnings**. The licensee shall post signage at both crossing approaches, warning that the road is subject to flooding. In the event that a significant storm event is forecasted that is likely to cause road overtopping, provisions should be made to barricading the road. The signage shall be maintained until the condition has been eliminated as expected by the implementation of additional future projects to be completed under the overall Harbor Brook Flood Control Master Plan.

8. **Protection of Wood Turtles (*Glyptemys insculpta*).** The best management practices listed below shall be implemented and adhered to at the site to be protective of the State listed species of concern, the Wood Turtle.

    a. To avoid impacts to wood turtles it is recommended that work be conducted during the inactive season between November 1st and March 31st. If work must occur during the turtles' active season between April 1st and October 31st, the following protective measures shall be implemented and adhered to.

        i. Exclusionary fencing will be required to prevent any turtle access into construction areas. These measures shall be installed at the limits of disturbance around the work area prior to construction.

        ii. Exclusionary fencing shall be at least 20 inches tall and be secured to and remain in contact with the ground. Silt fencing installed for erosion control may serve this like purpose; however avoid the use of plastic or netted silt fence.

        iii. Exclusionary fencing shall be regularly inspected and maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may allow turtles to pass through.

        iv. In areas where silt fencing is used for exclusion, it shall be removed as soon as soils are stable to allow for reptile and amphibian passage to resume.

        v. All construction personnel and work crews working within the turtle habitat shall be apprised of the species description and possible presence, and shall also be advised that any turtles found inside the work areas shall be relocated or to notify the appropriate authorities to relocate them.

        vi. The contractor, a consulting herpetologist, or a qualified professional familiar with the turtle habitat requirements and behavior shall conduct a search for any turtles within the work site area each morning prior to the start of any work activities. Any turtles that are discovered shall be carefully moved, unharmed, to an area immediately outside of the fenced area in the same direction that it was walking. If a turtle is found within the work site an inspection of the site to identify and remove the access point shall be completed.

vii. Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove the access point.

viii. Any confirmed sightings of box, wood, or spotted turtles shall be reported and documented with the NDDB at nddbrequestdep@ct.gov using the special animal form found at http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641.

ix. No heavy machinery or vehicles shall be parked in any turtle habitat.

x. If felling trees adjacent to brooks and streams, they shall be cut to fall away from the waterway, not dragged across waterway, and not have their stumps removed from the banks

This project concurs with license authorizations 201101871-DIV and 201101872-WQC issued to the City of Meriden on June 26, 2012. Hydraulic changes due to the removal and replacement of this structure will be captured in a final LORM filing to FEMA by the City of Meriden in accordance with special conditions 3 and 5 of the afore mentioned licenses and in agreement with the Harbor Brook Flood Control and Linear Trail Master Plan.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

August 31, 2020
Date

Brian P. Thompson
Division Director
Land & Water Resources Division

LWRD General Conditions

1. **Land Record Filing (for *Structures Dredging & Fill*, *Tidal Wetlands*, *Certificate of Permission*, and *Long Island Sound General Permit* Licenses only).** The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to the Commissioner no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.

2. **Contractor Notification.** The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.

3. **Work Commencement[1].** Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to the Commissioner, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.

   - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
   - For emergency activities authorized pursuant Connecticut General Statutes Section 22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.

4. **For Coastal Licenses Only - License Notice.** The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.

5. **Unauthorized Activities.** Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be

[1] The Work Commencement condition and the need for a Work Commencement Form is not applicable to Flood Management Certification approvals.

deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means "wetland" as defined by section 22a-29 and "freshwater wetlands and watercourses" means "wetlands" and "watercourses" as defined by section 22a-38.

6. **Unconfined Instream Work.** Unless otherwise noted in a condition of the license, the following conditions apply to projects in non-coastal waters:
   - Unconfined instream work is limited to the period June 1 through September 30.
   - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year.
   - Once a work area has been confined, in-water work within the confined area is allowed any time of the year.
   - The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.

7. **For State Actions Only - Material or Equipment Storage in the Floodplain.** Unless approved by a Flood Management Exemption, the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood is prohibited. Any other material or equipment stored at the site below said elevation by the Licensee or the Licensee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day. In accordance with the licensee's Flood Contingency Plan, the Licensee shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Licensee's responsibility to obtain such warnings when flooding is anticipated.

8. **Temporary Hydraulic Facilities for Water Handling.** If not reviewed and approved as a part of the license application, temporary hydraulic facilities shall be designed by a qualified professional and in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Connecticut Stormwater Quality Manual*, or the *Department of Transportation's ConnDOT Drainage Manual,* as applicable. Temporary hydraulic facilities may include channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours.

9. **Excavated Materials.** Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.

10. **Best Management Practices.** The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing

or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, "pollution" means "pollution" as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation's *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.

11. **Work Site Restoration.** Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.

12. **Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.

13. **Change of Use. (Applies only if a use is specified within the License "*Project Description*")**

    a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

    b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.

14. **De Minimis Alteration.** The Licensee shall not deviate from the authorized activity without prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.

    - For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.

15. **Extension Request.** The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to the Commissioner at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. It shall be the Commissioner's sole discretion to grant or deny such request.

16. **Compliance Certification.** Not later than 90 days after completion of the authorized work, the Licensee shall prepare and submit to the Commissioner the attached Compliance Certification Form. Such Compliance Certification shall be completed, signed, and sealed by the Licensee and a Connecticut Licensed Design Professional. If non-compliance is indicated on the form, or the Commissioner has reason to believe the activities and/or structures were conducted in non-compliance with the license, the Commissioner may require the Licensee to submit as-built plans as a condition of this license.

17. **Maintenance.** The Licensee shall maintain all authorized structures or work in optimal condition or shall remove such structures or facility and restore the affected waters to their pre-work condition. Any such maintenance or removal activity shall be conducted in accordance with applicable law and any additional approvals required by law.

18. **No Work After License Expiration.** Work conducted after the license expiration date is a violation of the license and may subject the licensee to enforcement action, including penalties, as provided by law.

19. **License Transfer.** The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.

20. **Document Submission.** Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    Regulatory Section
    Land & Water Resources Division
    Department of Energy and Environmental Protection
    79 Elm Street
    Hartford, Connecticut 06106-5127
    860-424-3019

21. **Date of Document Submission.** The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in the license, the word "day" as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

22. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such

document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

23. **Accuracy of Documentation.** In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee's representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

24. **Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee's application. Neither the Licensee's representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

25. **Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency's review and written approval, a report including the following information:

    a. the provision(s) of the license that has been violated;

    b. the date and time the violation(s) was first observed and by whom;

    c. the cause of the violation(s), if known;

    d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

    e. if the violation(s) has not ceased, the anticipated date when it will be corrected;

    f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and

    g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

    If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the

Commissioner.

26. **Revocation/Suspension/Modification.** The license may be revoked, suspended, or modified in accordance with applicable law.

27. **Other Required Approvals.** License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.

28. **Rights.** The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

29. **Condition Conflicts.** In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Compliance Certification Form

The following certification must be signed by the licensee working in consultation with a Connecticut-licensed design professional and must be submitted to the address indicated at the end of this form within ninety (90) days of completion of the authorized work.

1. Licensee Name: CT DOT

   DEEP License Number(s): 201815843-FM

   Municipality in which project is occurring: Center Street over Harbor Brook, Meriden

2. **Check one:**

   (a) ☐ "I certify that the final site conditions and / or structures are in general conformance with the approved site plans". Identify and describe any deviations and attach to this form.

   (b) ☐ "The final site conditions and / or structures are not in general conformance with the approved site plans. The enclosed "as-built" plans note the modifications".

3. "I understand that any false statement in this certification is punishable as a criminal offence under section 53a-157b of the General Statutes and under any other applicable law."

______________________________ ____________

Signature of Licensee Date

____

Name of Licensee (print or type)

______________________________ ____________

Signature of CT-Licensed Design Professional Date

____

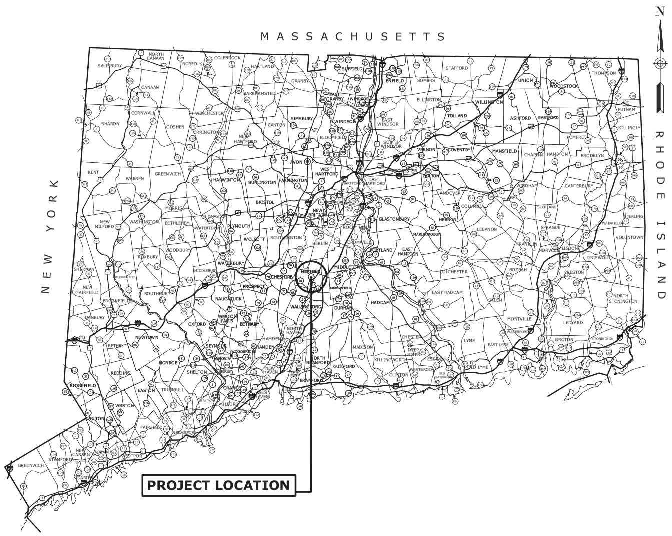
Name of CT-Licensed Design Professional (print or type)

____

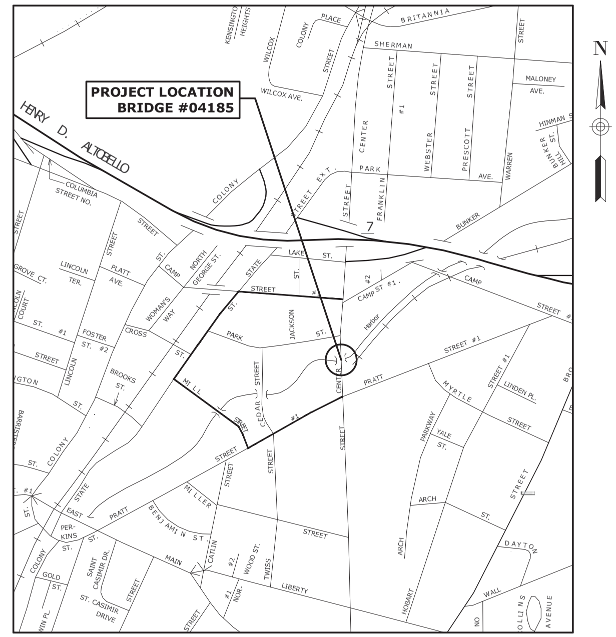
Professional License Number (if applicable) Affix Stamp Here

- As-built plans shall include: elevations or tidal datums, as applicable, and structures, including any proposed elevation views and cross sections included in the approved license plans. Such as-built plans shall be the original ones and be signed and sealed by an engineer, surveyor or architect, as applicable, who is licensed in the State of Connecticut.
- The Licensee will be notified by staff of the Land and Water Resources Division (LWRD) if further compliance review is necessary. Lack of response by LWRD staff does not imply compliance.

Submit this completed form to :
Regulatory Section
Department of Energy and Environmental Protection
Land & Water Resources Division
79 Elm Street
Hartford, CT 06106-5127



ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 79-212 REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
MERIDEN



LOCATION MAP
SCALE: 1" = 500'

LIST OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND/WATERCOURSE IMPACT PLAN
PMT-04	100-YR FLOOD IMPACT PLAN
PMT-05	ELEVATION AND SECTION PLAN
PMT-06	STAGING/WATER HANDLING PLAN
PMT-07	STAGING/WATER HANDLING PLAN

GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. HORIZONTAL DATUM BASED ON NAD27 TO AN ACCURACY OF CLASS A-2. VERTICAL DATUM IS BASED ON NGVD29 TO AN ACCURACY OF CLASS T-2.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.
6. WETLANDS DELINEATION BY SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC. ON NOVEMBER 7, 2014. SURVEY INCLUDING WETLAND FLAG LOCATIONS, PERFORMED BY WILLIAM HEARN, L.S., CHESTER, CT.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

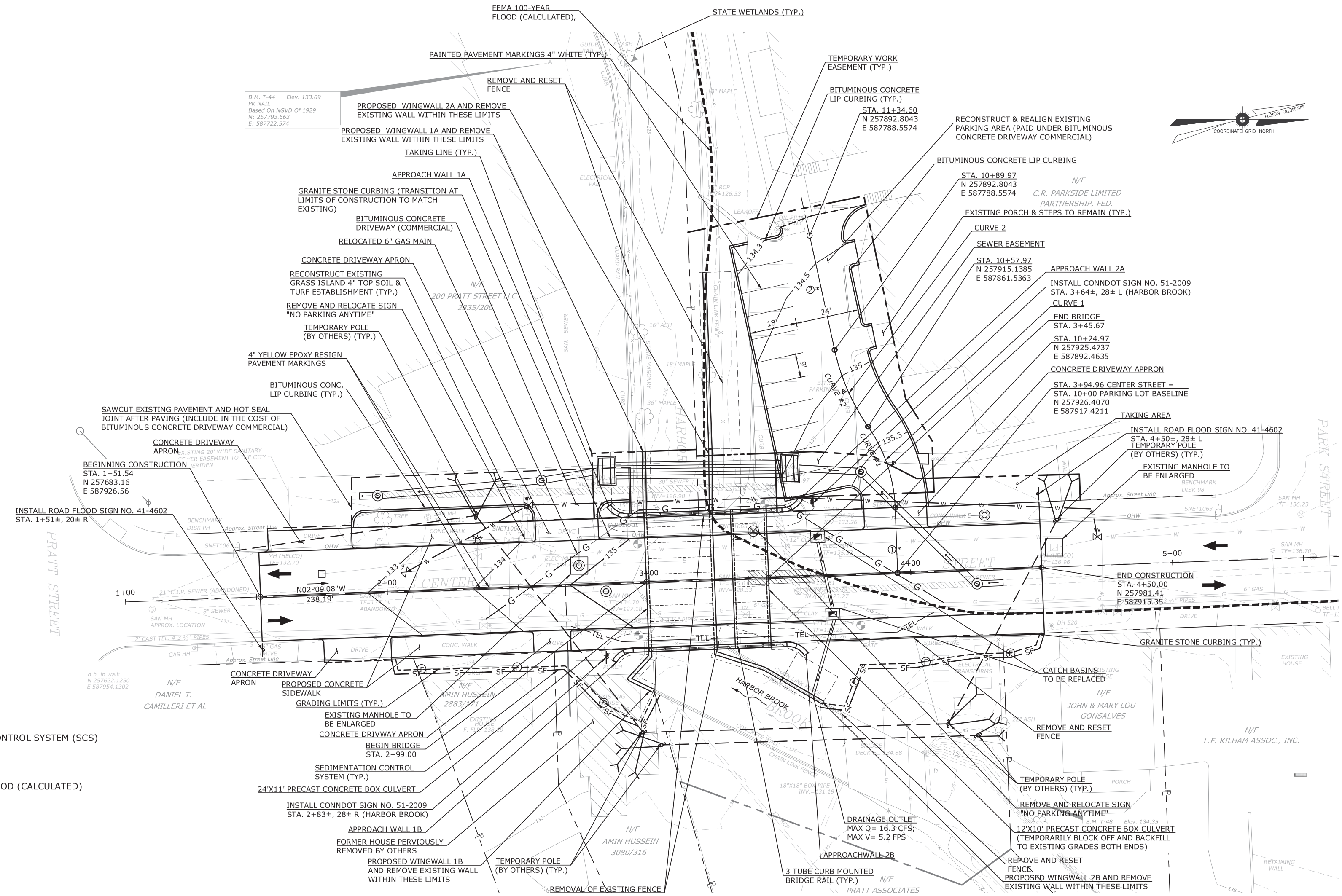
SUPV. J.A.C.
DESIGN D.R.B.
DRAWN D.R.B.
CHECKED K.O.E.
DATE 11/30/2018

WMC CONSULTING ENGINEERS
WENGELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR
CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
TITLE SHEET

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-01	PMT-07



LEGEND

—SF——SF——SF—	SEDIMENTATION CONTROL SYSTEM (SCS)
———/\———	STATE WETLANDS
- - - - - -	FEMA 100-YEAR FLOOD (CALCULATED)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GENERAL SITE PLAN
SCALE: 1" = 20'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

SUPV.	J.A.C.	
DESIGN	D.R.B.	
DRAWN	D.R.B.	
CHECKED	K.O.E.	
DATE	11/30/2018	

NO.	DATE	DESCRIPTION

REVISIONS

WMC CONSULTING ENGINEERS

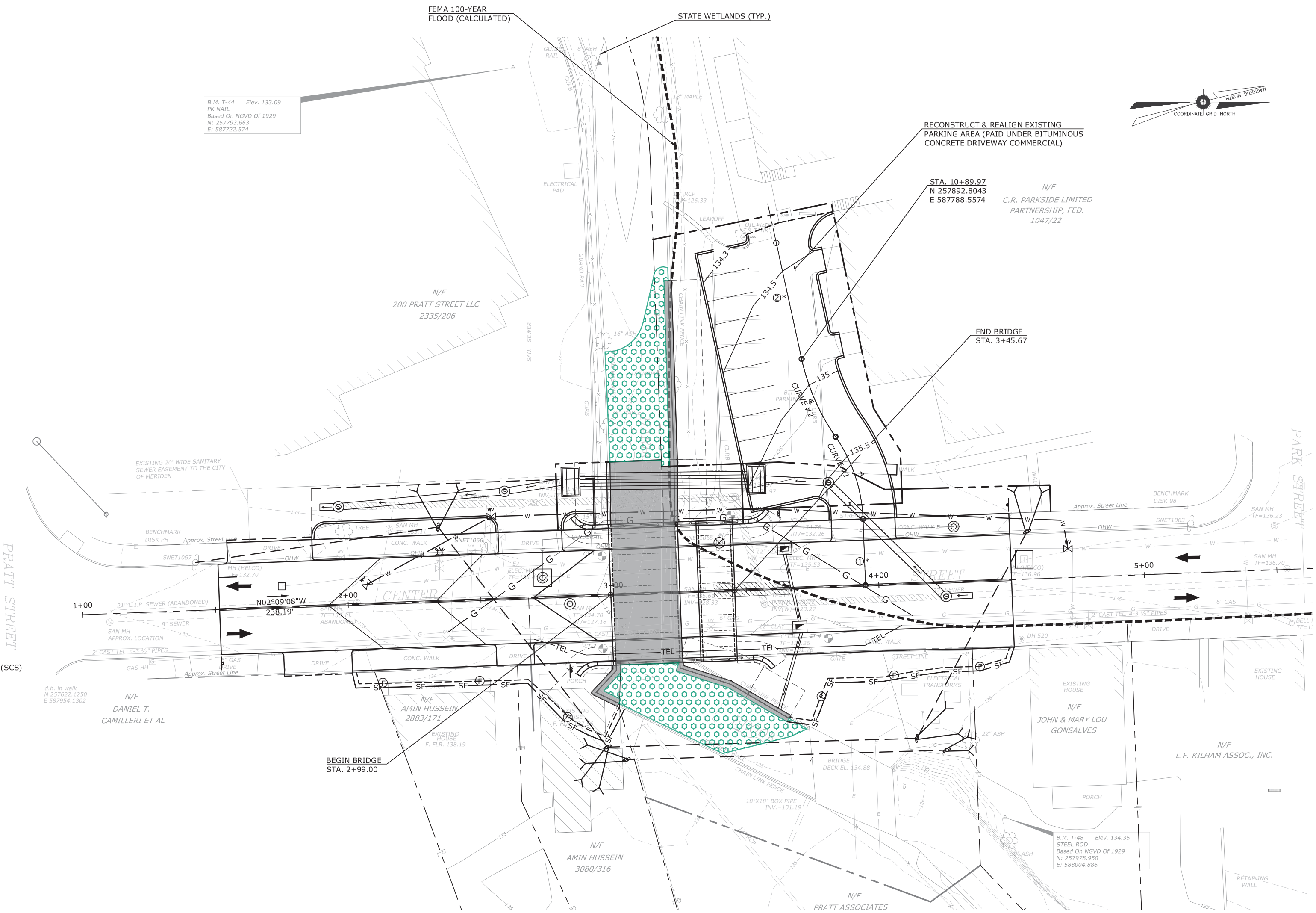
WENGELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
GENERAL SITE PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET / OF
D –	CENTER STREET –	S.F.D. –	00056.55 –		PMT-02 / PMT-07



NOTES:

1. THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.
2. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.
3. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH A WETLAND SEED MIX. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE COVERED WITH A WOOD CHIP MULCH OR A CONSERVATION SEED MIX. ALL DISTURBED AREAS SHALL BE RESTORED.

LEGEND

THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL EFFECT THE NOTED REGULATED AREAS.

PERMANENT WATERCOURSE IMPACTS

TEMPORARY WATERCOURSE IMPACTS

SF SF SF SEDIMENTATION CONTROL SYSTEM (SCS)

STATE WETLANDS

FEMA 100-YR FLOOD (CALCULATED)

WETLAND/WATERCOURSE IMPACT TABLE

	WETLAND/WATERWAY IMPACTS
PERMANENT IMPACTS	2,233 S.F. (0.051 AC.)
TEMPORARY IMPACT	2487 S.F. (0.057 AC.)
TOTAL IMPACTS	4720 S.F. (0.108 AC.)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

WETLAND/WATERCOURSE IMPACT PLAN

SCALE: 1" = 20'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION
REVISIONS		

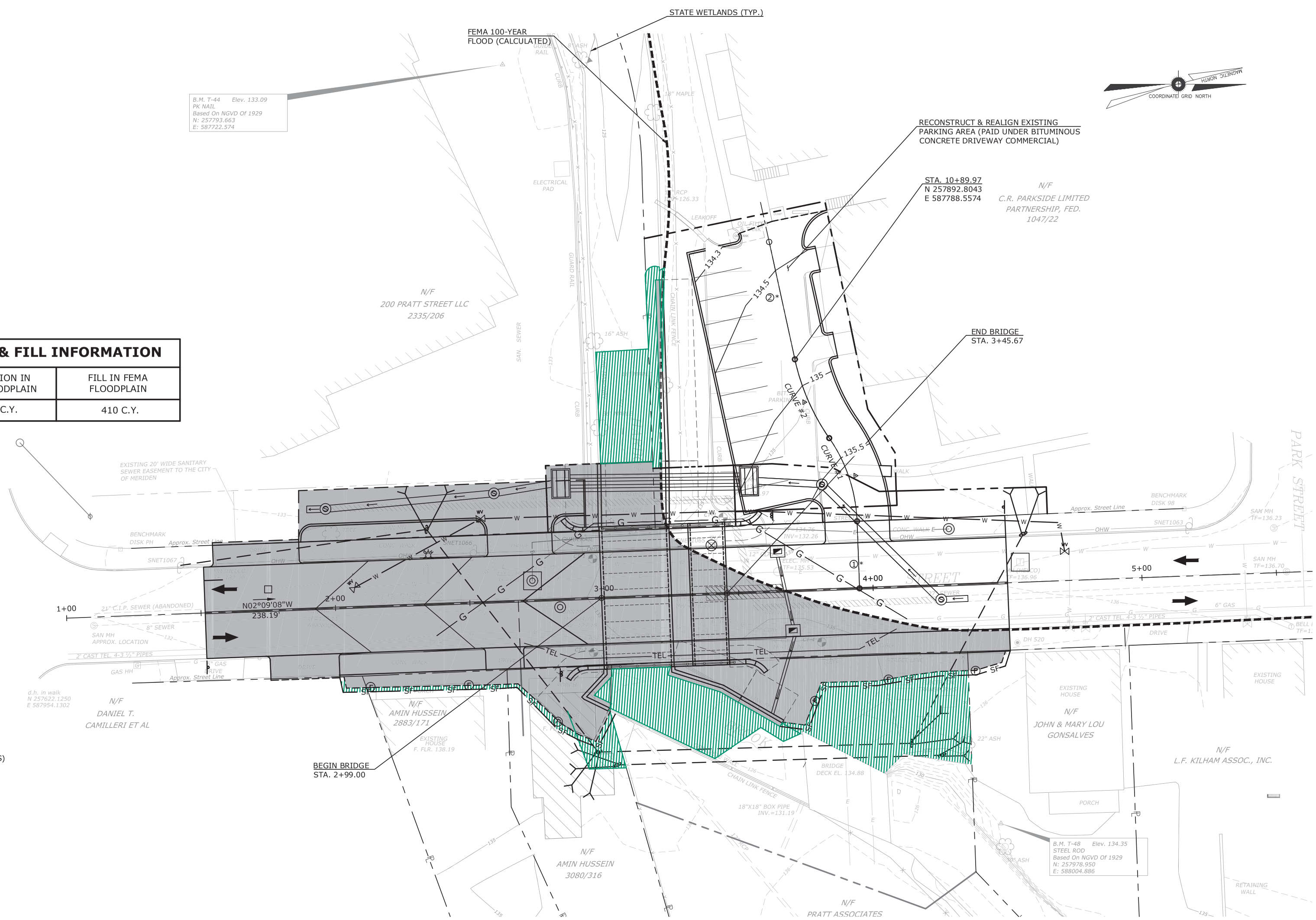
SUPV.	J.A.C.
DESIGN	D.R.B.
DRAWN	D.R.B.
CHECKED	K.O.E.
DATE	11/30/2018

WMC CONSULTING ENGINEERS
WENGELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR
CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
WETLAND/WATERCOURSE IMPACT PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-03	PMT-07



100-YEAR FLOOD IMPACT PLAN

SCALE: 1" = 20'

100-YEAR FLOODPLAIN IMPACTS, CUT, & FILL INFORMATION

TEMPORARY IMPACT AREA	PERMANENT IMPACT AREA	EXCAVATION IN FEMA FLOODPLAIN	FILL IN FEMA FLOODPLAIN
4,443 S.F. (0.102 AC.)	16,396 S.F. (0.376 AC.)	1,670 C.Y.	410 C.Y.

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

LEGEND

- PERMANENT 100-YR FLOOD IMPACTS
- TEMPORARY 100-YR FLOOD IMPACTS
- SF — SF — SF — SEDIMENTATION CONTROL SYSTEM (SCS)
- STATE WETLANDS
- FEMA 100-YEAR FLOOD (CALCULATED)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
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CHECKED	K.O.E.
DATE	11/30/2018

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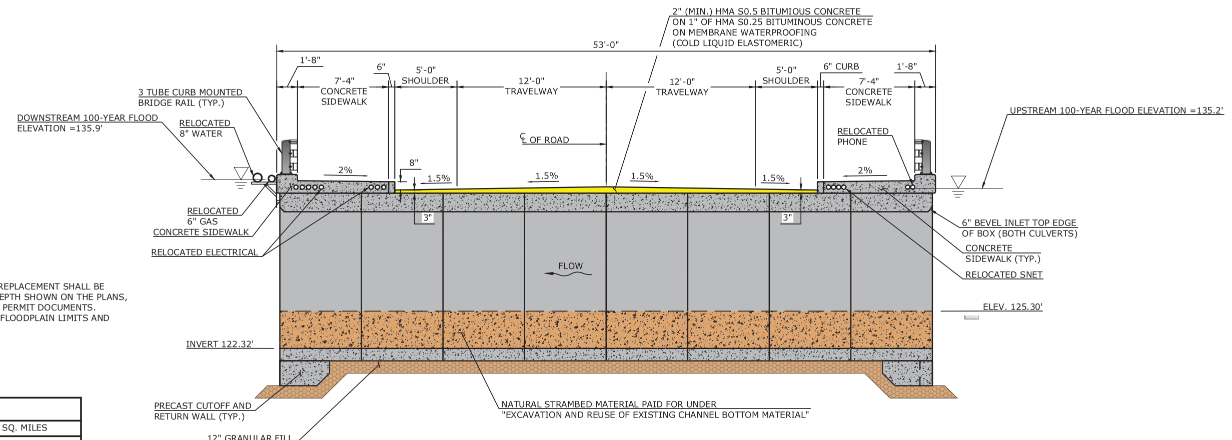
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
100-YEAR FLOOD IMPACT PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET / OF
D	CENTER STREET	S.F.D.	00056.55		PMT-04 OF PMT-07



24'X11' BOX CULVERT SECTION (NORMAL TO BASELINE)

SCALE: 1" = 5'-0"

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE BRIDGE REPLACEMENT SHALL BE STOCKPILED AND THEN REPLACED WITHIN THE BRIDGE TO THE DEPTH SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER, AND IN ACCORDANCE WITH THE PERMIT DOCUMENTS.
2. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND AND FLOODPLAIN LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

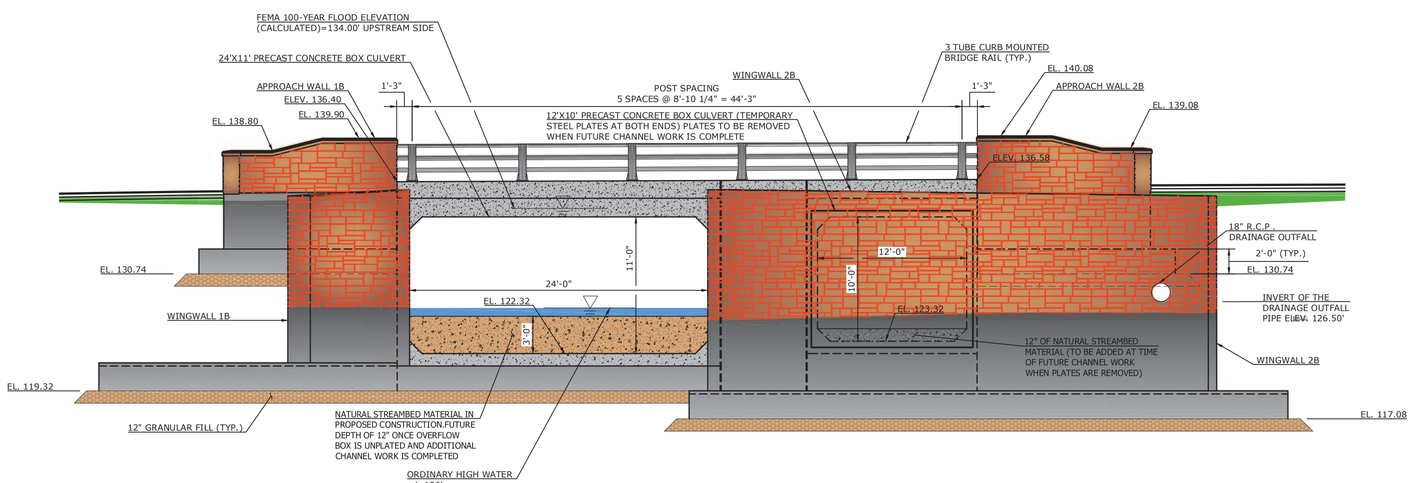
HYDRAULIC DATA	
DRAINAGE AREA	9.033 SQ. MILES
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	2731 CFS
AVERAGE DAILY FLOW ELEVATION	±126 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	135.2 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	135.9 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / BRIDGE LENGTH
OR = 192.5 S.F / 53 L.F = 3.6 FT. = 1.1 m
1.1 m > 0.25 m (RECOMMENDED MINIMUM)

BANKFULL WIDTH (BFW):

BFW = 29 FT. EXISTING UPSTREAM (OHW)
1.2 x BFW = 35 FT.
35 FT. > 24 FT. PROPOSED BRIDGE SPAN



UPSTREAM STRUCTURE ELEVATION (LOOKING DOWNSTREAM)

SCALE: 1" = 5'-0"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
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CHECKED	K.O.E.
DATE	11/30/2018

WMC CONSULTING ENGINEERS

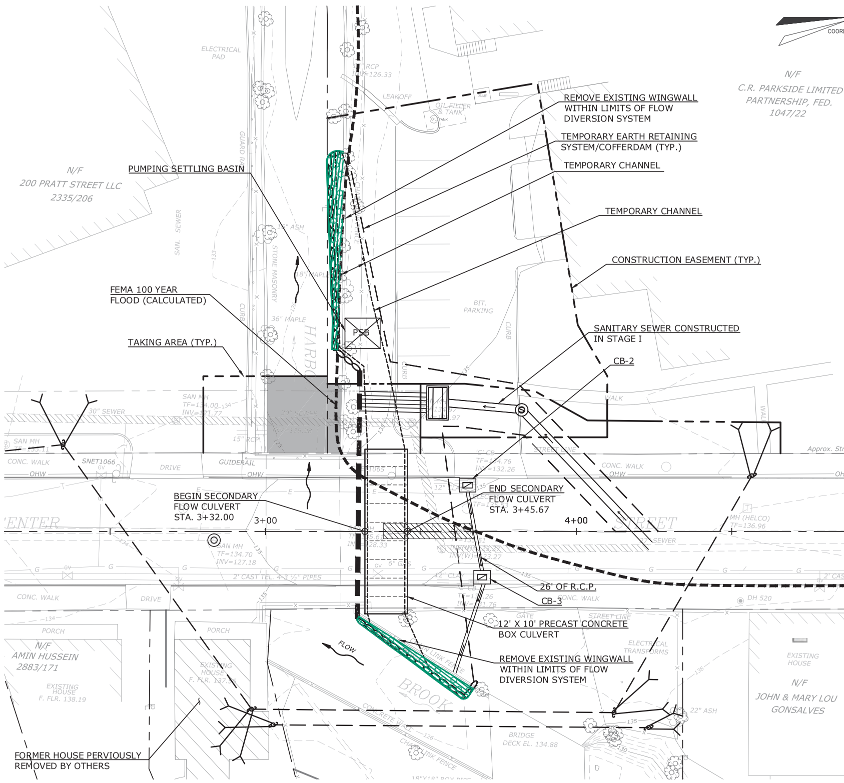
WENGELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

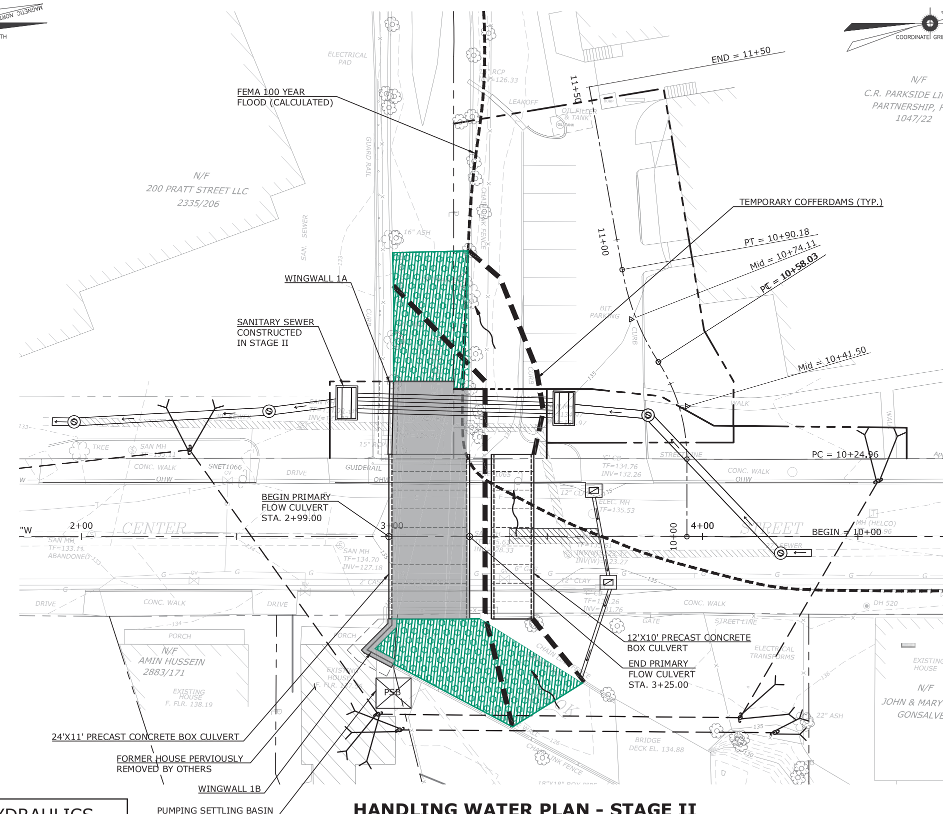
REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
ELEVATION AND SECTION PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55	–	PMT-05	PMT-07



HANDLING WATER PLAN - STAGE I

SCALE: 1" = 20'



HANDLING WATER PLAN - STAGE II

SCALE: 1" = 20'

TEMPORARY FACILITIES HYDRAULICS

AVERAGE DAILY FLOW	16 CFS
AVERAGE SPRING FLOW	32 CFS
2 - YEAR FREQUENCY DISCHARGE	716 CFS
TEMPORARY DESIGN DISCHARGE	1197 CFS
TEMPORARY DESIGN FREQUENCY	5-YR
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	134.4 FEET (STAGE II, 5 YEAR DISCHARGE) 129.5 FEET (STAGE III, 10 TIMES AVERAGE SPRING FLOW)
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	132.1 FEET (STAGE II, 5 YEAR DISCHARGE) 129.3 FEET (STAGE III, 10 TIMES AVERAGE SPRING FLOW)

STAGE I:

1. CLOSE CENTER STREET TO ALL THROUGH TRAFFIC
2. KEEP STREAM IN EXISTING CHANNEL.
3. INSTALL TEMPORARY EARTH RETAINING SYSTEMS AS SHOWN ON THE PLAN.
4. INSTALL TEMPORARY SUPPORT OF UTILITIES AND DRAINAGE.
5. INSTALL NEW SEWER MAIN AS SHOWN IN STAGE I.
6. INSTALL DRAINAGE.
7. INSTALL SECONDARY FLOW CULVERT.
8. EXCAVATE TEMPORARY CHANNEL FOR STAGE II FLOWS AS SHOWN.
9. INSTALL FLOW DIVERSION SYSTEM FOR REMOVAL OF EXISTING WINGWALLS. CONTRACTOR TO MINIMIZE CONFINEMENT OF THE BROOK TO ONLY THE AMOUNT OF TIME REQUIRED FOR REMOVING THE WINGWALLS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

TEMPORARY WATERCOURSE IMPACTS
TEMPORARY 100-YR FLOOD IMPACTS
SF — SEDIMENTATION CONTROL SYSTEM (SCS)
FEMA 100-YR FLOOD (CALCULATED)
PERMANENT WATERCOURSE IMPACTS
STATE WETLANDS
FLOW DIVERSION SYSTEM
TEMPORARY EARTH RETAINING SYSTEMS
TEMPORARY COFFERDAM

STAGE II:

1. INSTALL TEMPORARY COFFERDAMS DIVERTING FLOW THROUGH THE NEWLY INSTALLED SECONDARY FLOW CULVERT. TOP OF COFFERDAM ELEVATIONS SHALL BE 134.5' UPSTREAM OF CENTER STREET AND 132.5' DOWNSTREAM OF CENTER STREET WHICH SHOULD PROVIDE PROTECTION FOR THE COMPUTED 5 YEAR DESIGN DISCHARGE WITH NO FREEBOARD.
2. CONSTRUCT REMAINING PORTIONS OF SANITARY SEWER. INSTALL BYPASS AS NEEDED TO CONNECT TO EXISTING.
3. REMOVE EXISTING SEWER SYSTEMS AS SHOWN.
4. REMOVE REMAINING PORTIONS OF THE EXISTING BRIDGE AND WINGWALLS WITHIN LIMITS SHOWN.
5. INSTALL NEW PRIMARY FLOW BOX CULVERT.
6. CONSTRUCT WINGWALL 1A AND 1B

NOTE:
COFFERDAM/SHEETING MAY BE LEFT IN PLACE TO AVOID SETTLEMENT OF THE PROPOSED AND EXISTING STRUCTURES.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION		
			SUPV.	J.A.C.
			DESIGN	D.R.B.
			DRAWN	D.R.B.
			CHECKED	K.O.E.
REVISIONS			DATE	11/30/2018

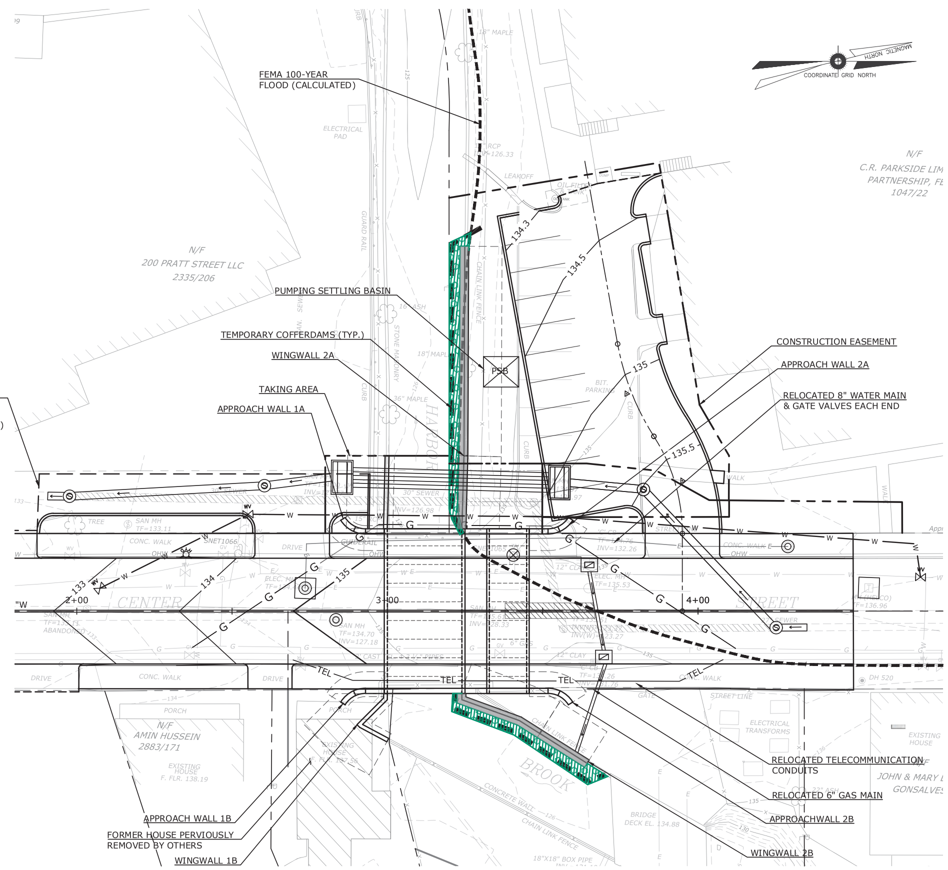
WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
HANDLING WATER PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D –	CENTER STREET –	S.F.D. –	00056.55 –		PMT-06	PMT-07



HANDLING WATER PLAN - STAGE III

SCALE: 1" = 20'

LEGEND

- TEMPORARY 100-YR FLOOD IMPACTS
- PERMANENT WATERCOURSE IMPACTS
- TEMPORARY WATERCOURSE IMPACTS
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE WETLANDS
- TEMPORARY COFFERDAM

STAGE III:

1. INSTALL TEMPORARY COFFERDAMS AS NEEDED FOR STAGE III CONSTRUCTION. TOP OF COFFERDAM ELEVATIONS SHALL BE 130.0' WHICH SHOULD PROVIDE PROTECTION FOR 10 TIMES THE ESTIMATED AVERAGE SPRING FLOW WITH NO FREEBOARD.
2. CONSTRUCT WINGWALL 2A AND 2B AND PLATE OFF SECONDARY FLOW CULVERT.
3. CONSTRUCT PARAPETS AND APPROACH WALLS, BACKFILL AND REGRADE UPSTREAM AND DOWNSTREAM ENDS OF SECONDARY FLOW CULVERT TO MATCH PRE-PROJECT CONDITION/GRADING.
4. CONSTRUCT SIDEWALKS, PAVE ROADWAY AND INSTALL BRIDGE RAIL.
5. PERFORM FINAL GRADING, TURF ESTABLISHMENT AND SITE CLEANUP.
6. OPEN ROAD TO TRAFFIC AND PEDESTRIANS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE TOWN AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
DRAWN	D.R.B.
CHECKED	K.O.E.
DATE	11/30/2018

WMC
CONSULTING ENGINEERS

• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
HANDLING WATER PLAN 2

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55	–	PMT-07	PMT-07

CITY OF MERIDEN
DEPARTMENT OF PUBLIC WORKS
HOWARD WEISSBERG, P.E., DIRECTOR
142 EAST MAIN STREET, ROOM 19
MERIDEN, CT. 06450-5667
(203) 630-4018 FAX (203) 630-4025

October 3, 2018

City of Meriden Department of Public Works
Attn: Howard Weissberg, P.E.
142 East Main Street, Room 19
Meriden, CT 06450

RE: Floodplain Development Permit Application
Center Street Bridge Replacement

Dear Mr. Weissberg:

The Flood Control Implementation Agency, at its regular meeting held on October 2, 2018, voted to approve the City's request for replacement of the Center Street Bridge over Harbor Brook, to be constructed within the 100-year floodplain of Harbor Brook

If you have any questions of comments, please feel free to contact me at 203-630-4019.

Very truly yours,

Brian Ennis, P.E.
Associate City Engineer

Attachment: Permit for Floodplain Development

c.c. Flood Control Implementation Agency
File – Center Street Bridge Replacement Application
File

CITY OF MERIDEN

FLOOD AND EROSION COMMISSION

MERIDEN, CONNECTICUT

PERMIT APPLICATION
FOR
FLOODPLAIN DEVELOPMENT

(Official Use Only)

Date of Application 9/14/14 Date Approved/Denied 10/2/14

Application Number ________

SECTION I
APPLICANTS INFORMATION

1. Name of Applicant Howard Weissberg, PE, Director of Public Works
   Address City Hall, 142 East Main Street, Meriden, CT 06450
   Telephone (203) 630 - 4018

2. Name of Property Owner City of Meriden
   Address City Hall, 142 East Main Street, Meriden, CT 06450
   Telephone (203) 630 - 4018

3. Location of Property:

   Assessor's Lot Number(s) ________ Block Number(s) ________

   Street(s) of Access Center Street Bridge No. 04185 over Harbor Brook

   Name of Watercourse(s) Harbor Brook

   Total Area of Lot(s) The total project area is approximately 1.00 acres.

SECTION II
PROJECT DESCRIPTION

1. Floodplain use for which the applicant is seeking a permit. (Check one).

   Permitted Use ________ Regulated Use ________

   Special Exception X

2. General description of proposed activity. (Check all appropriate categories).

New Development ______________ Substantial Improvement ______________

Other (specify) X- municipal bridge reconstruction

Proposed encroachment of Floodfringe Area X

Proposed encroachment of Regulated Floodway N/A, No FEMA Floodway

Proposed alteration of Watercourse X

Floodproofing techniques proposed N/A

Does this proposal involve the disturbance of designated Wetland areas? Yes X No ______________

SECTION III

REQUIRED DOCUMENTATION

The following items have been requested by the Administrator: (as specified below):

1. Site plans X
2. Detail plans X
3. Construction specs ______________
4. Drainage comps X

5. Floodproofing details N/A
6. Floodproofing certification N/A

SECTION IV

TECHNICAL & PLANNING DATA

1. Project Specifics (Provide the following information from official sources or submitted documentation).

Existing base flood flow rate 3865 cfs Source FEMA FIS Report

Existing base flood elevation (relative to mean sea level) Approx. 135' (NGVD29) Source WMC HEC-RAS model

Lowest finished floor elevation of existing buildings N/A

Lowest finished floor elevation of proposed buildings N/A

2. Floodway Alterations Proposed:

Proposed base flood flow rate N/A, no FEMA adopted regulatory Floodway

Proposed base flood elevation (relative to mean sea level)

____

Length of reconstructed or altered floodway ____________

The applicant understands that this application shall be considered complete only when all information and documents required by the Administrator have been submitted.

The undersigned warrants the truth of all statements contained herein and in all supporting documents to the best of his/her knowledge and belief.

____
Applicant's Signature

Due consideration was given to this application as to its conformance with the requirements, stipulations and intent of the City's Floodplain Management and Development Ordinance, dated September 30, 1982, and as may be amended. The Administrator of said ordinance does hereby take the following action concerning this application:

____

____

____

____
Administrator's Signature and Title

Due consideration was given to this application as to its conformance with the requirements, stipulations and intent of said Ordinance. The Meriden Flood and Erosion Commission does hereby take the following action concerning this application:

____

____

____

____
Chairman or Secretary, Flood & Erosion Commission

CITY OF MERIDEN
FLOOD CONTROL IMPLEMENTATION AGENCY MEETING

October 2, 2018 Regular Meeting **8:00 A.M.**

DPW/ENGINEERING DIV., CONFERENCE ROOM #28, CITY HALL

MINUTES OF MEETING

1. **CALL TO ORDER:**

Chairman Rohde called the meeting of the Flood Control Implementation Agency to order at 8:05 a.m. A quorum was present.

2. **ATTENDANCE:**

Present:	Michael Rohde, Chairman Carmine Trotta, Vice Chairman Art Peitler Donald Smith Sonya Jelks, City Council
Absent:	David White, Secretary Cathy Battista, City Council
Others Present:	Brian Ennis, P.E., Associate City Engineer Timothy Coon, City Manager Renata Bertoti, AICP, Assistant City Planner Keegan Elder, P.E., WMC Consulting Engineers

3. **APPROVAL OF MINUTES:**

a. Minutes of Regular Meeting of Flood Control Implementation Agency of September 4, 2018:
A motion to approve the Minutes of the September 4, 2018 Regular Meeting was made by Mr. Trotta and seconded by Mr. Smith, and carried unanimously

4. **COMMUNICATIONS/CORRESPONDENCE:**

a. Letter to Dan Biron, Senior Environmental Analyst, Connecticut DEEP, from Brian Ennis, P.E., Associate City Engineer, detailing the proposed Scope of Work for the Harbor Brook Flood Control & Linear Trail Project, Phase I (Item 5b). A Scope was required for DEEP to0 write the Grant Award for the $6,900,000 grant received for the project.

5. **REPORTS OF OFFICERS AND STAFF:**

a. Status Report - Harbor Brook Bridge Replacement
Amtrak Railroad Bridge: Mr. Coon and Mr. Ennis met with FEMA and DEMHS in September to discuss the project and the status of the FEMA Grant. FEMA has determined that the scope change will require an update of the State Historical Preservation Office (SHPO) review completed in 2012 to include the railroad embankment retaining walls.
Center Street Bridge: Report will be covered under Item 7a..

The meeting adjourned at 9:05 a.m.

Respectfully submitted:

David White, Secretary

Date

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

March 12, 2021

Regulatory Division
File No. NAE-2007-02588

Brian Ennis
City of Meriden Dept. of Public Works
142 East Main Street
Meriden, Connecticut 06450
bennis@meridenct.gov

Dear Mr. Ennis:

This is in response to our receipt of a CT Dept. of Energy and Environmental Protection Flood Management Certification for the above-referenced bridge project. Our files indicate that the replacement of this structure is associated with, and was encompassed within, a permit issued for a multiple-phased plan for Harbor Brook (Corps File No. NAE-2007-02588). The permit was issued on July 2, 2012 and rehabilitation of a 3.4 mile portion of Harbor Brook (8.83-acres of impact below ordinary high water and additional impact to wetlands), daylighting 3.2 acres of piped stream, construction of flood storage capacity (75-acre feet), a linear trail, and associated flood control improvement measures including reconstruction of underside bridge openings along Harbor Brook. The activity included permittee-responsible mitigation including creation, rehabilitation and enhancement of waters and wetlands, filing of eight individual conservation easements, archeological investigation, and historic documentation of multiple structures, including several bridges. This work is in Harbor Brook between Baldwin's Pond Dam and Hanover Pond, Meriden, Connecticut as depicted on the attached location map and the proposed work is described on the enclosed plans entitled “ENVIRONMENTAL PERMIT PLANS STATE PROJECT NO. 79-212 REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK MERIDEN,” on 7 sheets, and dated “11/20/2018,” and the “CITY OF MERIDEN, CONNECTICUT, PLAN FOR REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK, STATE PROJECT # 79-212,”, prepared by WMC Consulting Engineers and dated January 28, 2019 (sheets 1-32).

With this letter the permit is hereby modified to:

- Install and construct a water handling system as detailed in the water handling plans; stage 1, stage 2 and stage 3 on permit plan sheets 6 and 7 dated November 30, 2018 and plan sheets 18 and 19 of the contract plans dated January 28, 2019.
- Remove and replace an existing 24.5-foot clear span arch masonry bridge structure and associated wing walls.

- Construct and install two precast concrete box culverts, one of 24-feet by 11 feet and the other 12-feet by 10-feet and their associated wing walls.
    - Place 3-feet of native stream bed material inside the 24-foot by 11-foot box culvert.
    - Install steel plates to cover both ends of the 12-foot by 11-foot box culvert opening and backfill to existing grades.

The work is subject to the following special conditions:

1. The native stream bed material excavated during the bridge reconstruction activities shall be stockpiled and then used as the fill material within the new bridge structure. The stockpiled material shall be located outside of wetland and floodplain limits and protected using appropriate sedimentation and erosion control measures.

2. Effluent from dewatering work areas should not be discharged directly to watercourse and must processed through treatment structures. Such structures should not be located within the stream channel r adjacent to wetlands.

3. Unconfined instream work is limited to the period June 1 through September 30.

    a. Confinement of a work area by cofferdam techniques using sandbag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed anytime of the year.

    b. The removal of such confinement devices is allowed any time of the year.

    c. Once a work area has been confined, in-water work within the confined area is allowed any time of the year. The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.

4. You must complete and return the enclosed Compliance Certification Form within 30 days of project completion. This condition is included so that project completion can be properly documented and so that discretionary post-construction compliance can be scheduled.

Finally, all other terms and conditions of the original permit remain in full force and effect.

We continually strive to improve our customer service. In order for us to better serve you, please complete our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

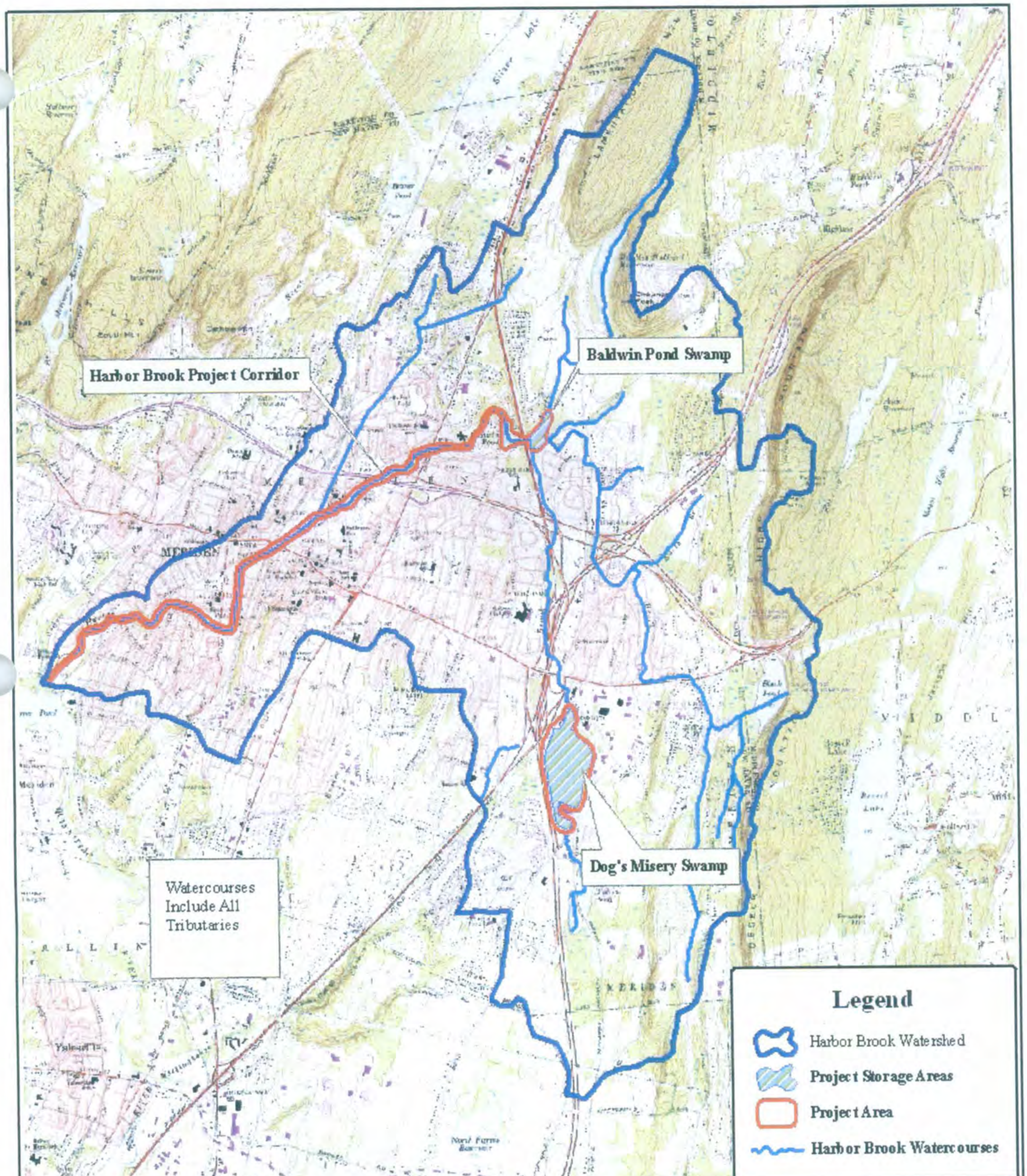
If you have any questions, please contact Cori M. Rose of my staff at (978) 318-8306.

Sincerely,

Michael S. Wierbonics
Acting Chief, Permits and Enforcement Branch
Regulatory Division

Enclosure

cc:
N. Margason, US EPA – via email
P. Olmstead, CT DOT Liaison – via email
J. Caiola, CT DEEP, Chief, Land & Water Resources Division – via email
S. Pappano, Land & Water Resources Division – via email
K. Lesay, CT DOT, via email
K. Elder, WMC Engineers, via email kelder@wmcengineers.com



MILONE & MACBROOM

99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

Harbor Brook Drainage Improvements

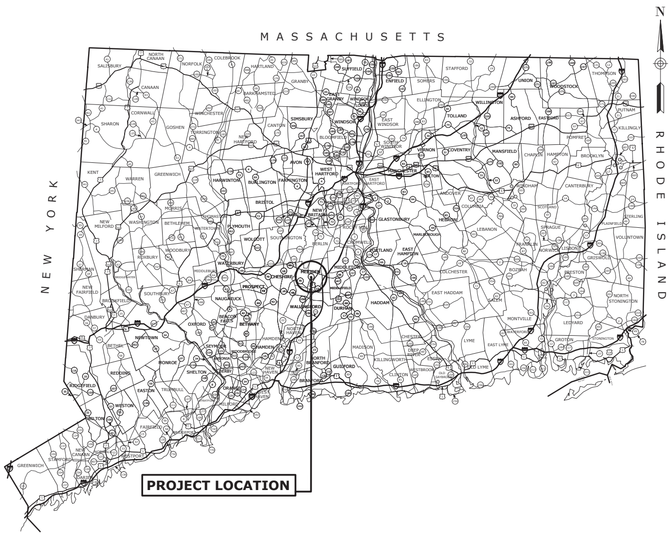
LOCATION: Meriden, CT

MMI#: 1261-14-20
MXD: H:\Attachment B.mxd
SOURCE: USGS

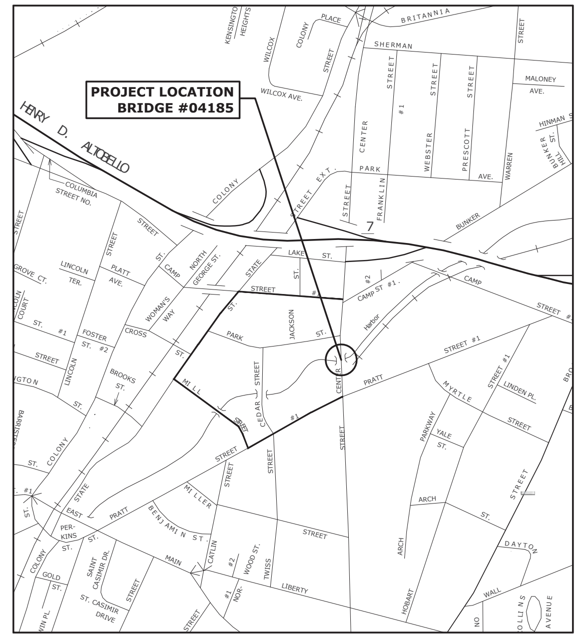
Harbor Brook Drainage Improvements

Date: September '08
Scale: 1"= 4000'

SHEET: Figure 1-1



ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 79-212 REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
MERIDEN



LOCATION MAP

SCALE: 1" = 500'

LIST OF DRAWINGS

DRAWING NO.	DRAWING TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND/WATERCOURSE IMPACT PLAN
PMT-04	100-YR FLOOD IMPACT PLAN
PMT-05	ELEVATION AND SECTION PLAN
PMT-06	STAGING/WATER HANDLING PLAN
PMT-07	STAGING/WATER HANDLING PLAN

GENERAL NOTES:

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. HORIZONTAL DATUM BASED ON NAD27 TO AN ACCURACY OF CLASS A-2. VERTICAL DATUM IS BASED ON NGVD29 TO AN ACCURACY OF CLASS T-2.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.
6. WETLANDS DELINEATION BY SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC. ON NOVEMBER 7, 2014. SURVEY INCLUDING WETLAND FLAG LOCATIONS, PERFORMED BY WILLIAM HEARN, L.S., CHESTER, CT.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
DRAWN	D.R.B.
CHECKED	K.O.E.
DATE	11/30/2018

WMC CONSULTING ENGINEERS

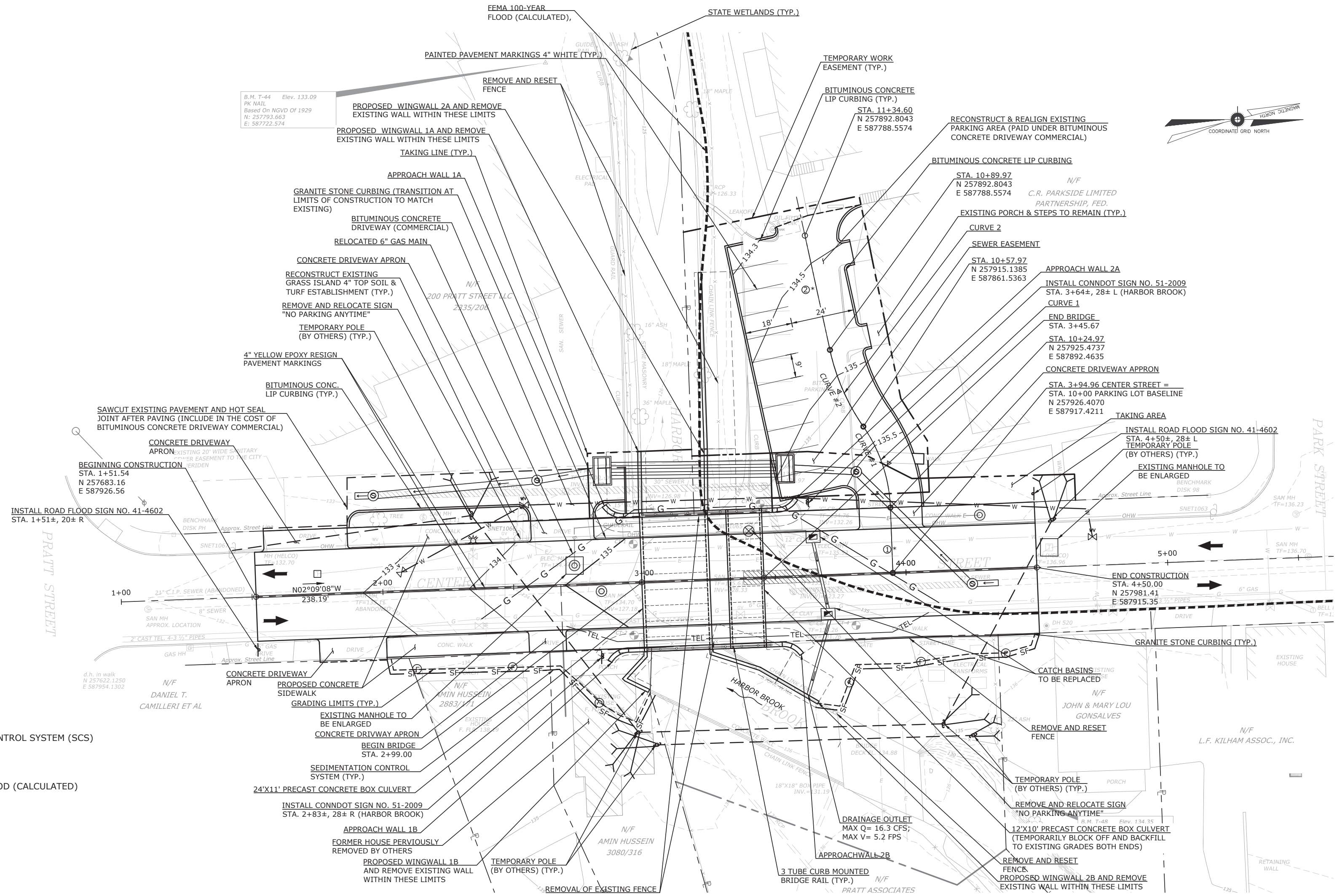
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
TITLE SHEET

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-01	PMT-07



LEGEND

—SF—SF—SF—	SEDIMENTATION CONTROL SYSTEM (SCS)
——/\——	STATE WETLANDS
- - - - -	FEMA 100-YEAR FLOOD (CALCULATED)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GENERAL SITE PLAN

SCALE: 1" = 20'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
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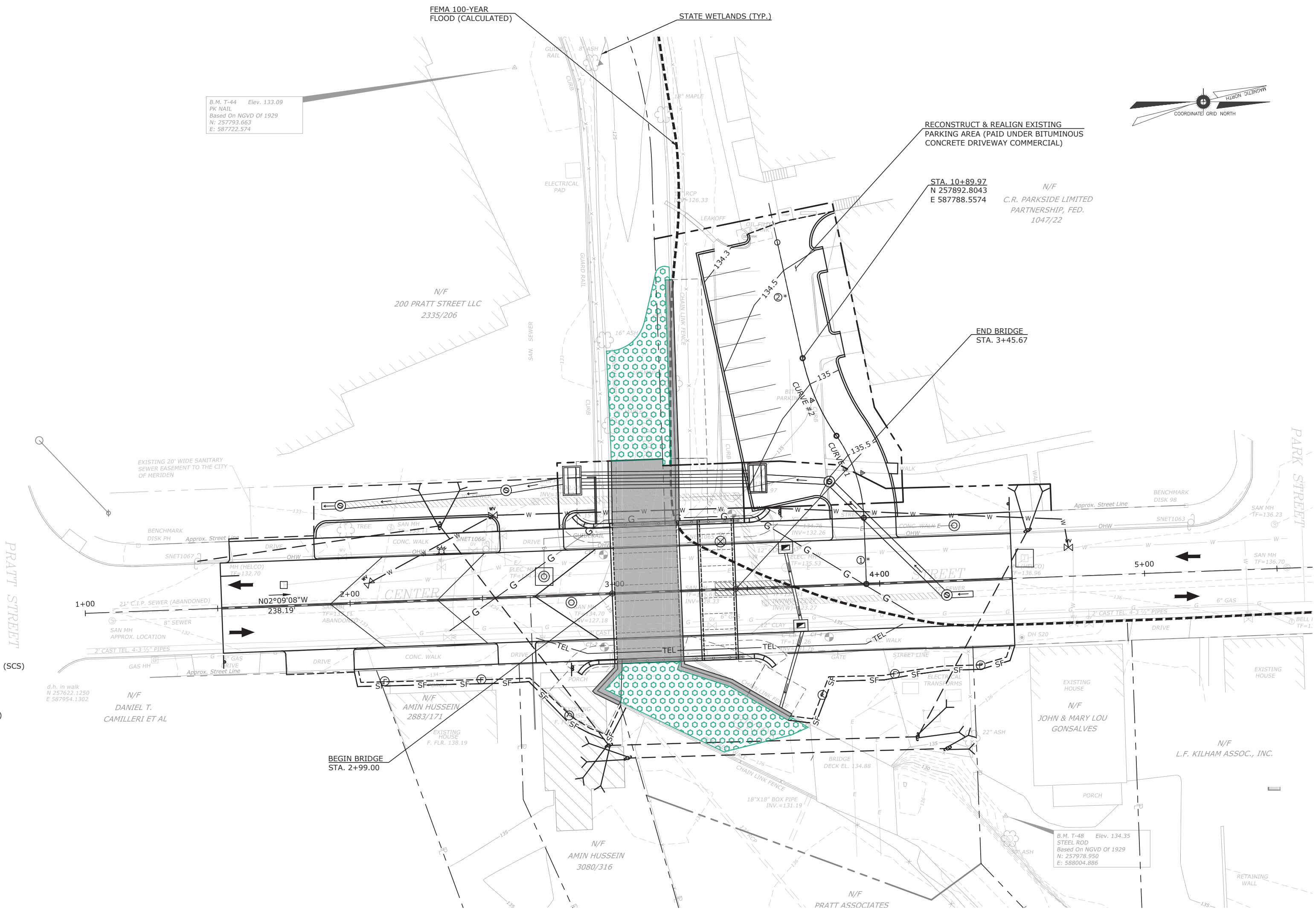
PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
GENERAL SITE PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET / OF
D	CENTER STREET	S.F.D.	00056.55		PMT-02 / PMT-07



WETLAND/WATERCOURSE IMPACT PLAN

SCALE: 1" = 20'

NOTES:

1. THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.
2. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.
3. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH A WETLAND SEED MIX. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE COVERED WITH A WOOD CHIP MULCH OR A CONSERVATION SEED MIX. ALL DISTURBED AREAS SHALL BE RESTORED.

LEGEND

THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL EFFECT THE NOTED REGULATED AREAS.

PERMANENT WATERCOURSE IMPACTS

TEMPORARY WATERCOURSE IMPACTS

SF—— SF—— SF—— SEDIMENTATION CONTROL SYSTEM (SCS)

STATE WETLANDS

FEMA 100-YR FLOOD (CALCULATED)

WETLAND/WATERCOURSE IMPACT TABLE

	WETLAND/WATERWAY IMPACTS
PERMANENT IMPACTS	2,233 S.F. (0.051 AC.)
TEMPORARY IMPACT	2487 S.F. (0.057 AC.)
TOTAL IMPACTS	4720 S.F. (0.108 AC.)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV. J.A.C.
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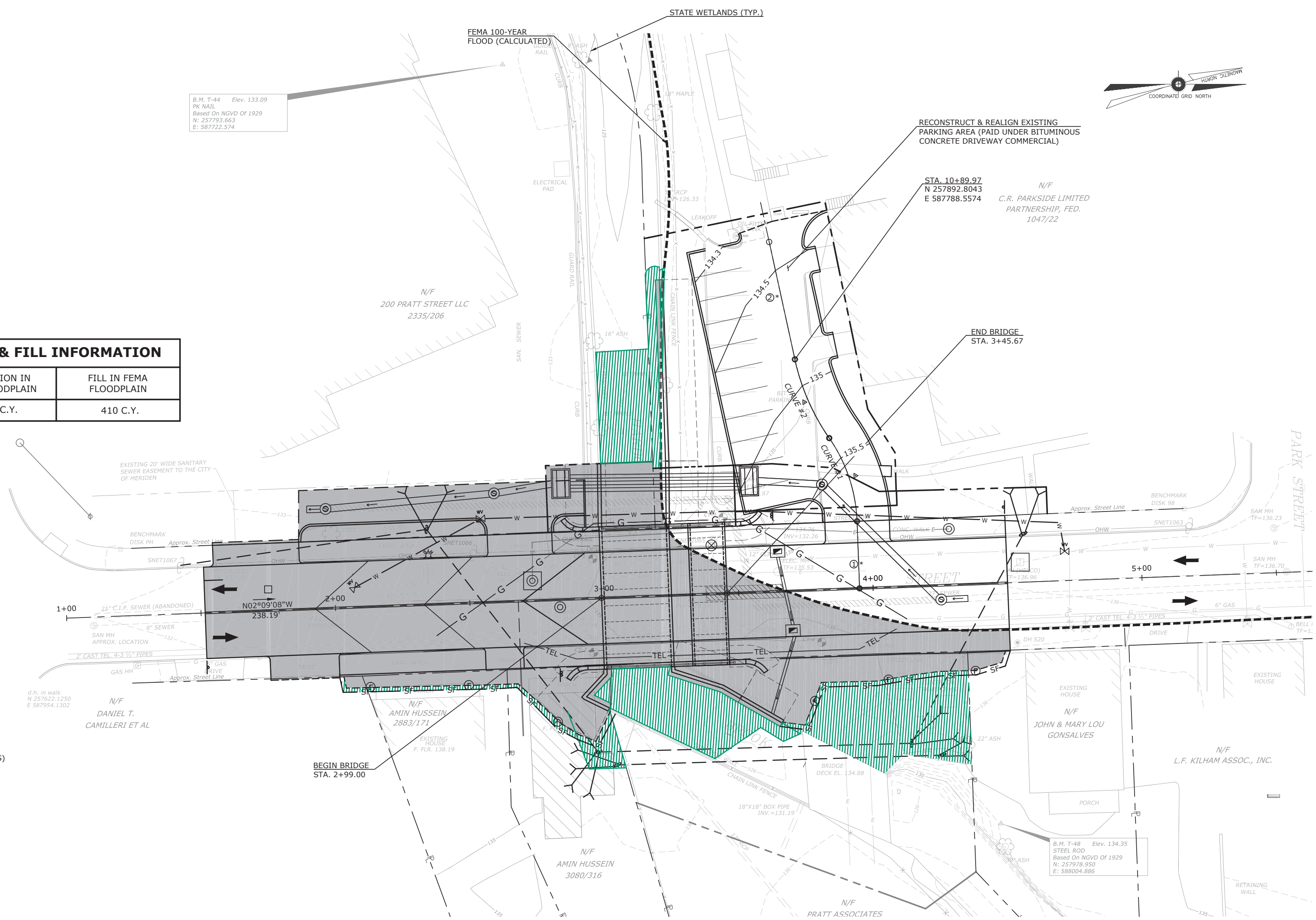
PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
WETLAND/WATERCOURSE IMPACT PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D –	CENTER STREET –	S.F.D.	– 00056.55 –		PMT-03	PMT-07



100-YEAR FLOODPLAIN IMPACTS, CUT, & FILL INFORMATION

TEMPORARY IMPACT AREA	PERMANENT IMPACT AREA	EXCAVATION IN FEMA FLOODPLAIN	FILL IN FEMA FLOODPLAIN
4,443 S.F. (0.102 AC.)	16,396 S.F. (0.376 AC.)	1,670 C.Y.	410 C.Y.

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

LEGEND

- PERMANENT 100-YR FLOOD IMPACTS
- TEMPORARY 100-YR FLOOD IMPACTS
- SF — SF — SF SEDIMENTATION CONTROL SYSTEM (SCS)
- STATE WETLANDS
- FEMA 100-YEAR FLOOD (CALCULATED)

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

100-YEAR FLOOD IMPACT PLAN

SCALE: 1" = 20'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION
		REVISIONS

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(860) 667-9624

PREPARED FOR
CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
100-YEAR FLOOD IMPACT PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-04	PMT-07

NATIVE STREAMBED MATERIAL NOTES:

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE BRIDGE REPLACEMENT SHALL BE STOCKPILED AND THEN REPLACED WITHIN THE BRIDGE TO THE DEPTH SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER, AND IN ACCORDANCE WITH THE PERMIT DOCUMENTS.
2. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND AND FLOODPLAIN LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.

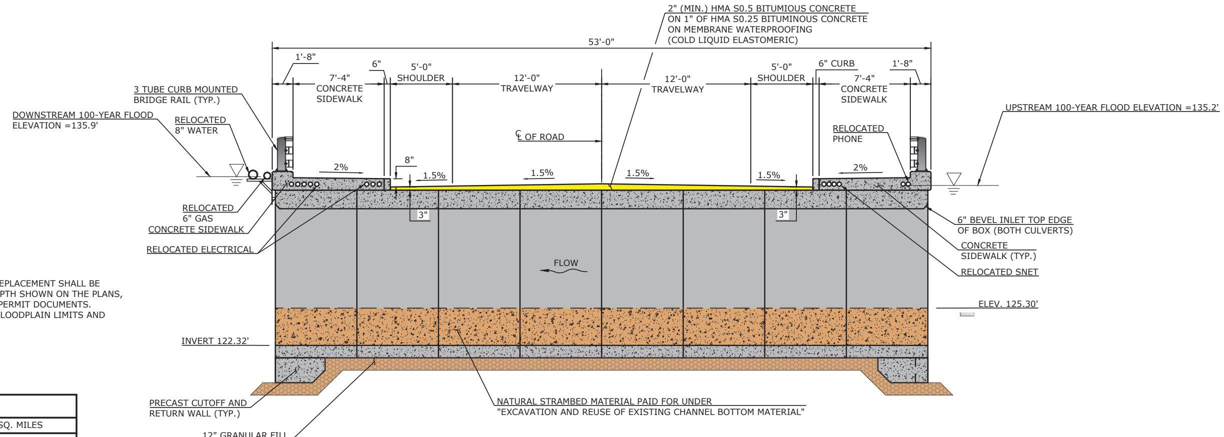
HYDRAULIC DATA	
DRAINAGE AREA	9.033 SQ. MILES
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	2731 CFS
AVERAGE DAILY FLOW ELEVATION	±126 FT
UPSTREAM DESIGN WATER SURFACE ELEVATION	135.2 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	135.9 FT.

OPENNESS RATIO (OR):

OR = OPEN AREA / BRIDGE LENGTH
OR = 192.5 S.F / 53 L.F = 3.6 FT. = 1.1 m
1.1 m > 0.25 m (RECOMMENDED MINIMUM)

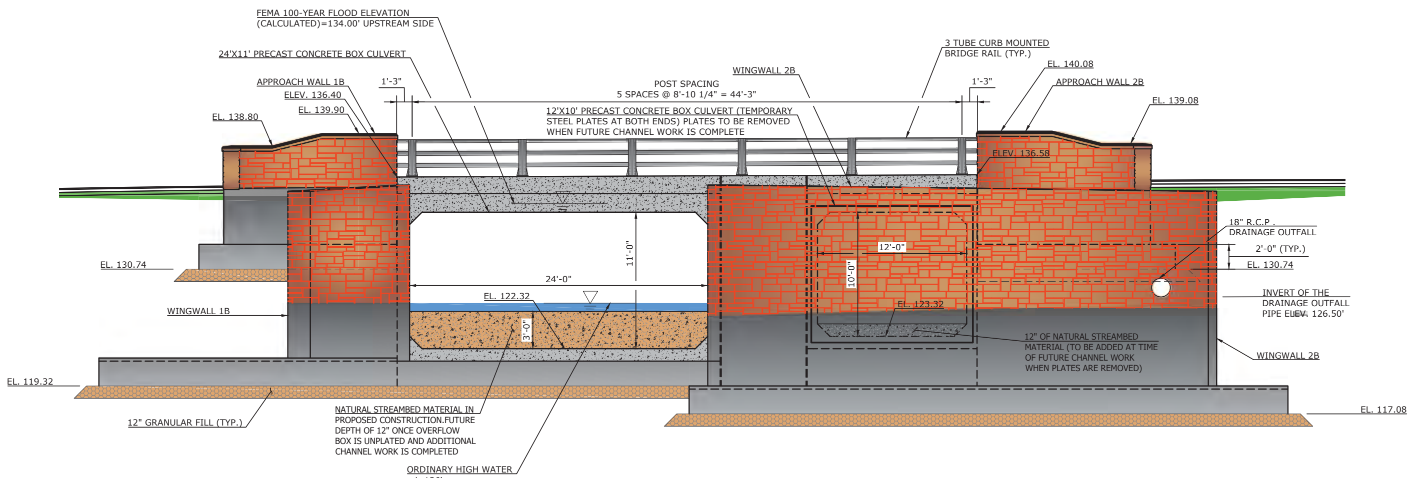
BANKFULL WIDTH (BFW):

BFW = 29 FT. EXISTING UPSTREAM (OHW)
1.2 x BFW = 35 FT.
35 FT. > 24 FT. PROPOSED BRIDGE SPAN



24'X11' BOX CULVERT SECTION (NORMAL TO BASELINE)

SCALE: 1" = 5'-0"



UPSTREAM STRUCTURE ELEVATION (LOOKING DOWNSTREAM)

SCALE: 1" = 5'-0"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
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CHECKED	K.O.E.
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WMC CONSULTING ENGINEERS

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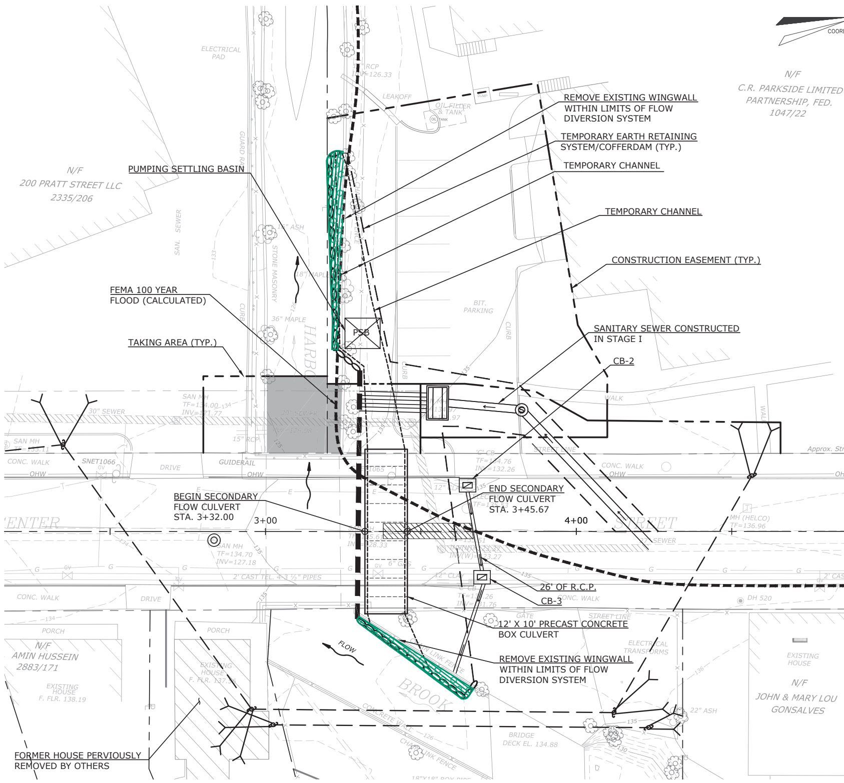
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

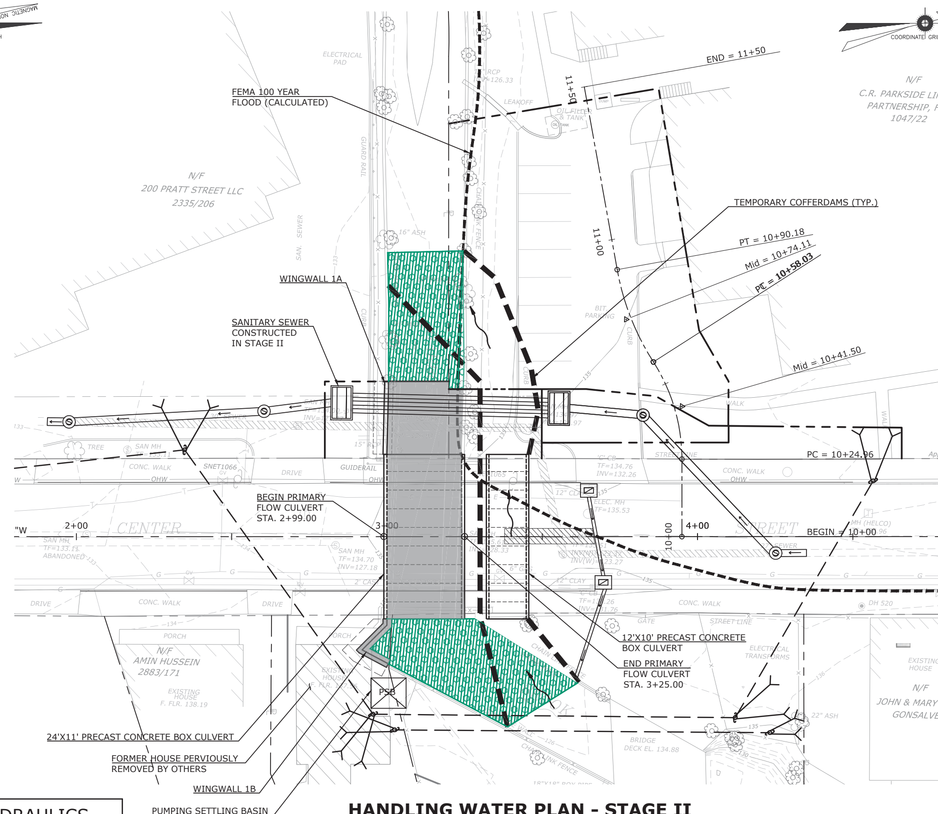
REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
ELEVATION AND SECTION PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-05	PMT-07



HANDLING WATER PLAN - STAGE I

SCALE: 1" = 20'



HANDLING WATER PLAN - STAGE II

SCALE: 1" = 20'

TEMPORARY FACILITIES HYDRAULICS

AVERAGE DAILY FLOW	16 CFS
AVERAGE SPRING FLOW	32 CFS
2 - YEAR FREQUENCY DISCHARGE	716 CFS
TEMPORARY DESIGN DISCHARGE	1197 CFS
TEMPORARY DESIGN FREQUENCY	5-YR
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	134.4 FEET (STAGE II, 5 YEAR DISCHARGE) 129.5 FEET (STAGE III, 10 TIMES AVERAGE SPRING FLOW)
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	132.1 FEET (STAGE II, 5 YEAR DISCHARGE) 129.3 FEET (STAGE III, 10 TIMES AVERAGE SPRING FLOW)

STAGE I:

1. CLOSE CENTER STREET TO ALL THROUGH TRAFFIC
2. KEEP STREAM IN EXISTING CHANNEL.
3. INSTALL TEMPORARY EARTH RETAINING SYSTEMS AS SHOWN ON THE PLAN.
4. INSTALL TEMPORARY SUPPORT OF UTILITIES AND DRAINAGE.
5. INSTALL NEW SEWER MAIN AS SHOWN IN STAGE I.
6. INSTALL DRAINAGE.
7. INSTALL SECONDARY FLOW CULVERT.
8. EXCAVATE TEMPORARY CHANNEL FOR STAGE II FLOWS AS SHOWN.
9. INSTALL FLOW DIVERSION SYSTEM FOR REMOVAL OF EXISTING WINGWALLS. CONTRACTOR TO MINIMIZE CONFINEMENT OF THE BROOK TO ONLY THE AMOUNT OF TIME REQUIRED FOR REMOVING THE WINGWALLS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- TEMPORARY WATERCOURSE IMPACTS
- TEMPORARY 100-YR FLOOD IMPACTS
- SF — SEDIMENTATION CONTROL SYSTEM (SCS)
- FEMA 100-YR FLOOD (CALCULATED)
- PERMANENT WATERCOURSE IMPACTS
- STATE WETLANDS
- FLOW DIVERSION SYSTEM
- TEMPORARY EARTH RETAINING SYSTEMS
- TEMPORARY COFFERDAM

STAGE II:

1. INSTALL TEMPORARY COFFERDAMS DIVERTING FLOW THROUGH THE NEWLY INSTALLED SECONDARY FLOW CULVERT. TOP OF COFFERDAM ELEVATIONS SHALL BE 134.5' UPSTREAM OF CENTER STREET AND 132.5' DOWNSTREAM OF CENTER STREET WHICH SHOULD PROVIDE PROTECTION FOR THE COMPUTED 5 YEAR DESIGN DISCHARGE WITH NO FREEBOARD.
2. CONSTRUCT REMAINING PORTIONS OF SANITARY SEWER. INSTALL BYPASS AS NEEDED TO CONNECT TO EXISTING.
3. REMOVE EXISTING SEWER SYSTEMS AS SHOWN.
4. REMOVE REMAINING PORTIONS OF THE EXISTING BRIDGE AND WINGWALLS WITHIN LIMITS SHOWN.
5. INSTALL NEW PRIMARY FLOW BOX CULVERT.
6. CONSTRUCT WINGWALL 1A AND 1B

NOTE:
COFFERDAM/SHEETING MAY BE LEFT IN PLACE TO AVOID SETTLEMENT OF THE PROPOSED AND EXISTING STRUCTURES.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

NO.	DATE	DESCRIPTION

REVISIONS

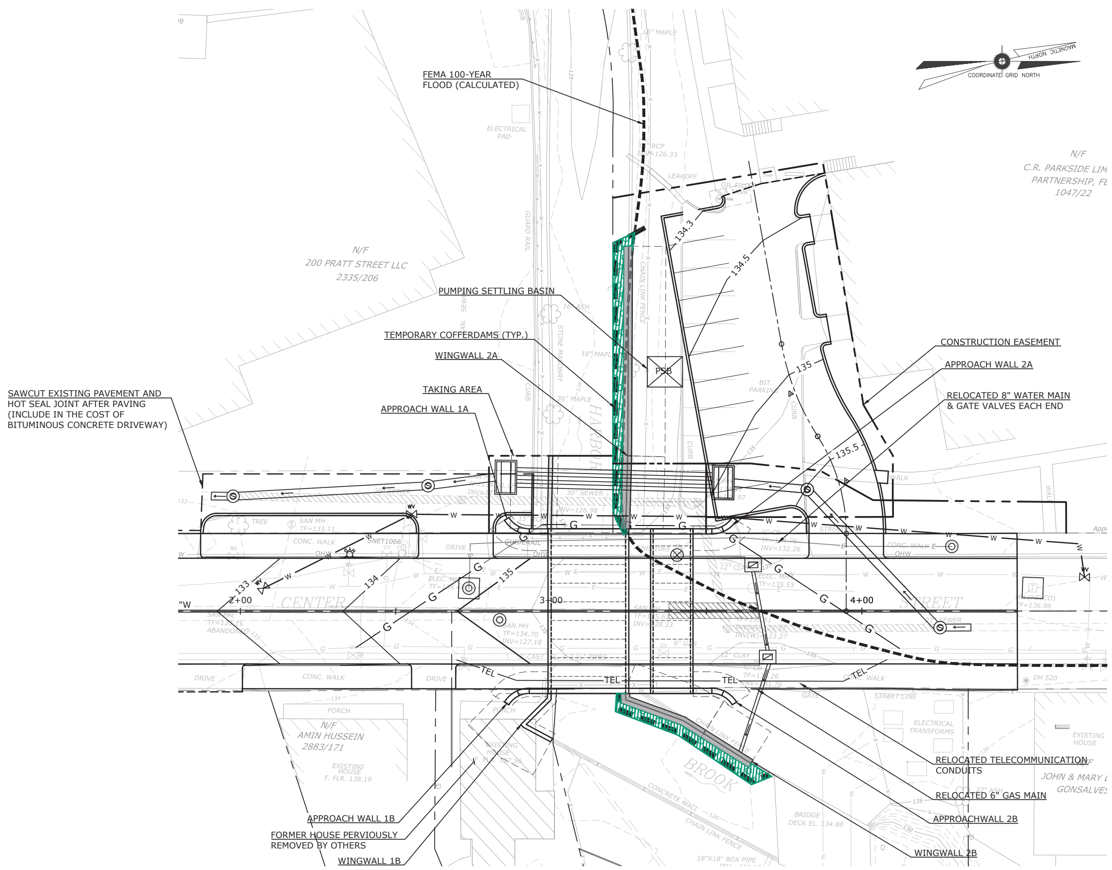
SUPV. J.A.C.
DESIGN D.R.B.
DRAWN D.R.B.
CHECKED K.O.E.
DATE 11/30/2018

WMC CONSULTING ENGINEERS
WENGELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR
CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
HANDLING WATER PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-06	PMT-07



LEGEND

- TEMPORARY 100-YR FLOOD IMPACTS
- PERMANENT WATERCOURSE IMPACTS
- TEMPORARY WATERCOURSE IMPACTS
- FEMA 100-YEAR FLOOD (CALCULATED)
- STATE WETLANDS
- TEMPORARY COFFERDAM

HANDLING WATER PLAN - STAGE III

SCALE: 1" = 20'

STAGE III:

1. INSTALL TEMPORARY COFFERDAMS AS NEEDED FOR STAGE III CONSTRUCTION. TOP OF COFFERDAM ELEVATIONS SHALL BE 130.0' WHICH SHOULD PROVIDE PROTECTION FOR 10 TIMES THE ESTIMATED AVERAGE SPRING FLOW WITH NO FREEBOARD.
2. CONSTRUCT WINGWALL 2A AND 2B AND PLATE OFF SECONDARY FLOW CULVERT.
3. CONSTRUCT PARAPETS AND APPROACH WALLS, BACKFILL AND REGRADE UPSTREAM AND DOWNSTREAM ENDS OF SECONDARY FLOW CULVERT TO MATCH PRE-PROJECT CONDITION/GRADING.
4. CONSTRUCT SIDEWALKS, PAVE ROADWAY AND INSTALL BRIDGE RAIL.
5. PERFORM FINAL GRADING, TURF ESTABLISHMENT AND SITE CLEANUP.
6. OPEN ROAD TO TRAFFIC AND PEDESTRIANS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 17, 2018

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE TOWN AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	D.R.B.
DRAWN	D.R.B.
CHECKED	K.O.E.
DATE	11/30/2018

WMC CONSULTING ENGINEERS

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87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR

CITY OF MERIDEN
142 EAST MAIN STREET
MERIDEN, CONNECTICUT 06450

REPLACEMENT OF CENTER STREET BRIDGE
OVER HARBOR BROOK
HANDLING WATER PLAN 2

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	CENTER STREET	S.F.D.	00056.55		PMT-07	PMT-07

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

July 2, 2012

Regulatory Division
CENAE-R
Permit Number: NAE-2007-2588

City of Meriden, Department of Public Works
Attn: Robert Bass
142 East Main Street
Meriden, CT 06450

Dear Mr. Bass:

Attached are two copies of a Department of the Army permit authorizing your project. **Please sign both copies of the permit and return one signed copy to this office at the address above.** Please enclose a check made payable to "FAO New England District", and return it with the signed permit copy. Please ensure your address and social security number, or tax identification number for businesses, are on the check. The authorized work cannot start until we receive a complete, signed copy of the permit.

You are required to complete and return the attached forms to this office:

1. Preliminary Jurisdictional Determination Form to be submitted along with your signed copy of the permit.
2. Work Start Notification Form at least two weeks before the anticipated work start date.
3. Compliance Certification Form within one month following the completion of the authorized work.
4. Mitigation Work Start Notification Form since your project involves mitigation.

This permit is a limited authorization containing a specific set of conditions. Please read the permit thoroughly to familiarize yourself with those conditions, **including any conditions contained on the attached state water quality certification.** If a contractor does the work for you, both you and the contractor are responsible for ensuring that the work is done in compliance with the permit's terms and conditions, as any violations could result in civil or criminal penalties.

Our verification of this project's wetland delineation under the Corps of Engineers Wetlands Delineation Manual, and its applicable supplement, is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

A combined Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) form, and flow chart explaining the appeals process and your options, are attached to this letter. If you desire to appeal this proffered permit, you must submit a completed RFA form along with any supporting or clarifying information to Michael G. Vissichelli, Administrative Appeals Review Officer, North Atlantic Division, Corps of Engineers, North Atlantic Fort Hamilton Military Community, Bldg. 301, General Lee Avenue, Brooklyn, NY 11252-6700. Contact information: (718) 765-7163 or michael.g.vissichelli@usace.army.mil.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP.

You may not appeal conditions contained in the State water quality certification or the CZM consistency determination under this program as they are automatically included in the Federal permit. Also note that the Department of the Army permit process does not supersede any other agency's jurisdiction.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://per2.nwp.usace.army.mil/survey.html

If you have any questions regarding this correspondence, please contact Amy Bourne at (978) 318-8651, (800) 343-4789, or use (800) 363-4367 within Massachusetts.

Sincerely,

Robert J. DeSista
Chief, Permits and Enforcement Branch
Regulatory Division

Attachments

Copy Furnished:

Milone & MacBroom Inc., Attn: Nicolle Burnham, 99 Realty Drive, Cheshire, CT 06410

Connecticut DEEP – IWRD, Attn: Sara Radacsi, 79 Elm Street, Hartford, Connecticut 06106

DEPARTMENT OF THE ARMY PERMIT

Permittee City of Meriden – Department of Public Works

Permit No. NAE-2007-2588

Issuing Office New England District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Flood control project along approximately 3.4 miles of Harbor Brook, resulting in 8.83 acres of permanent impacts below the ordinary high water mark and 1,323 square feet of permanent impacts and 783 square feet of temporary impacts to federal wetlands. These permanent and temporary impacts will result from a range of activities including the filling of the existing channel between Sodom Brook and Harbor Brook, creation of floodplain shelves, regrading the stream bed channel and associated bank grading; reestablishment of a low-flow thalweg channel; accumulated sediment removal; bank stabilization with coir logging; placement of rip rap; multiple bridge removal and replacements to accommodate the new proposed base flow; removal of retaining walls; daylighting 3.2 acres of piped stream; culvert, manhole and outfall installation; energy dissipater, sediment trap, dewatering pump and access road construction; and construction of a linear multi-use trail along the entire length of Harbor Brook

In order to compensate for lost flood storage as a result of the project, the applicant proposes to construct a 1.2 acre floodwater storage basin by excavating approximately 1 acre of upland forest on the right bank of Harbor Brook at Falcon Park and installing a flow control system at the Westfield Road bridge; this will result in 0.14 acres of impacts (part of the total 8.83 acres) below the ordinary high water mark and provide 21.8 acre-feet of storage volume. In addition, the former HUB site on Pratt Street will provide 53 acre-feet of flood storage volume.

All work will be in accordance with the engineering drawing set entitled "HARBOR BROOK FLOOD CONTROL AND LINEAR TRAIL PROJECT" (68 sheets) and dated "February 2011 and revised through April 18, 2012" (cover sheet attached – remaining sheets located on a CD entitled "Revised Project Plans April 2012 Response to Comments")

Project Location:

Harbor Brook, Meriden, Ct
Latitude North: Beginning 41 32 50 End 41 31 25
Longitude West: Beginning 72 46 78 End 72 49 51

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2022. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall ensure that a copy of this permit is at the work site (and the project office) authorized by this permit whenever work is being performed, and that all personnel with operational control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit shall be made a part of any and all contracts and sub-contracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this permit. This shall be achieved by including the entire permit in the specifications for work. The term "entire permit" means this permit (including its drawings, plans, appendices and other attachments) and also includes permit modifications.

(Special conditions continued on Page 4)

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

_______________________________ _______________________________

(PERMITTEE) *(DATE)*

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

_______________________________ 7/2/12

Chief, Permits & Enforcement Branch
Regulatory Division
For District Engineer

(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_______________________________ _______________________________

(TRANSFEREE) *(DATE)*

☆U.S. GOVERNMENT PRINTING OFFICE: 1986 — 717-425

(Special conditions continued from Page 2)

If the permit is issued after the construction specifications, but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. If the permit is issued after receipt of bids or quotes, the entire permit shall be included in the contract or sub-contract. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

2. The permittee shall complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

3. Work permitted by the Corps of Engineers may not commence until the City of Meriden receives a Letter of Map Revision (LOMR) from FEMA to modify the 1% annual chance discharge of the effective Flood Insurance Study (FIS). In addition, this office must be in receipt of a copy of the LOMR before work may commence.

4. Additional FEMA authorizations must be secured before any work can commence in the lettered cross-section areas B (Proposed River Station 4+37) and H (Proposed River Station 40+22) associated with regulated activities RA-8 and RA-23 where there will be more than a one foot increase in water surface elevation, as described in the table entitled "Hydraulic Modeling Results" in the March 2, 2012 Supplemental Application Materials.

5. The project will be constructed in four phases – Phase IA to include the Falcon Park Storage Area, the HUB site stream daylighting and the Barr Road mitigation area including invasive species removal; IB to include Center Street Bridge, Columbus Avenue Bridge and Brookside Park plantings; and II and III to include the remainder of the regulated activities through the year 2021. The phasing schedule should adhere to the plan view drawings entitled "PROPOSED CONDITIONS PHASING", sheets PH-1 and PH-2, and dated April 18, 2012 (revised). No further work may commence until all Phase I activities are complete. Any proposed changes to the phasing schedule must be submitted to this office for review and permit modification.

6. Eight individual conservation easements will be recorded for parcel #s 0910-322B-007A-0000, 0910-322B-007B-0000, 0910-322B-0007-0004, 0910-322B-006Q-0000 (Barr Road), 0910-0322-0007-0000 (Dogs Misery Swamp), 1110-269H-0027-028A (Falcon Park Storage Area), 0305-0266-0008-0037 (Brookside Park) and 0508-0239-0001-0000 (City Park). Within 60 days of the date of permit issuance and prior to initiation of permitted work in aquatic resources, the permittee shall execute and record the preservation document with the Registry of Deeds for the Town of Meriden and the State of Connecticut. A copy of the executed and recorded document must then be sent to the Corps of Engineers (this office) within 120 days of the date the Corps approves it.

7. Any unconfined in-stream activities located within the following project reaches of the City of Meriden Harbor Brook shall only be conducted during the time period of June 1 through September 30: Hanover Pond to Coe Avenue Bridge and Broad Street to Baldwin Pond Dam.

8.The 21.8 acre foot flood storage basin and weir structure upstream of the first Westfield Road bridge at Falcon Park as depicted on the plan view drawing entitled "FALCON PARK WEIR STRUCTURE DETAILS", dated 4/18/12, and the flood storage area at the HUB site will be constructed before any permitted activities below the ordinary high water mark or in federal wetlands may commence.

9. A post-construction, as-built survey of the Falcon Park storage basin will be conducted and a copy will be submitted to this office at 696 Virginia Road, Concord, MA 07142.

10.The Falcon Park Storage Area and the HUB site must remain able to accommodate 21.8 acre-feet and 53 acre-feet of water during the 1% annual chance event in perpetuity. The storage basin will be monitored for a period of five years and the storage volume will be documented and submitted to this office. In the event that sediment has accumulated in the basin, rendering it unable to accommodate the 50%, 10% or 1% annual chance flood, maintenance excavation must be conducted within 30 days of the monitoring results submittal. Proof that the storage areas are fully functioning must be in the form of photo documentation, a brief narrative indicating the success or failure of the storage area and documentation of the existing bottom elevation of the basin as compared to the beginning bottom elevation immediately post-construction. These storage areas and their respective acre-feet of storage must be recorded on the land records. Documentation of such recordation needs to be submitted to this office before any regulated work commences.

11.The demolition, removal, planting and invasive species control activities depicted on the plan view drawing entitled "MITIGATION PLAN – DOG MISERY SWAMP AT BARR ROAD" and dated February 2011, proposed on parcels 0910-322B-007B-0000, 0910-322B-007A-0000 and 0910-322B-0007-0004 must be completed per the above phased timeframe in special condition #5. Compensatory mitigation shall be completed before any other regulated activities commence.

12. Invasive species removal will be conducted at Barr Road as depicted on the plan view drawing entitled "MITIGATION PLAN – DOG MISERY SWAMP AT BARR ROAD" and dated 4/18/2012 (revised). The Barr Road area and the Falcon Park flood storage area will be monitored for invasive species for a period of 5 years and monitoring reports will be provided for each year per Attachment L entitled "WETLAND INVASIVE PLANT SPECIES MONITORING AND CONTROL PLAN" and dated April 18, 2012 (revised) and Section 1 of the May 2012 submittal.

13. All work associated with the Falcon Park storage area shall be in accordance with Section 9 of the Supplemental Application Materials – April 2012 from Milone & MacBroom, Inc.

14. All manipulated channel sections of Harbor Brook will have a natural substrate established post-construction that is of the same nature as the substrate before construction.

15. All bridges, culverts, channel and stormwater systems must be designed pursuant to the CT DOT Drainage Manual.

16. A pre-construction notification (PCN) will be provided to this office at least 30 days prior to the commencement of any bridge construction or removal. The PCN will include a narrative describing the work and the proposed impacts below the ordinary high water mark and in any federal wetlands. In addition, plan-view and cross-section drawings of the design of the bridge depicting any proposed impacts will be provided.

17. Structures identified in Section 12 of the Supplemental Application Materials – April 2012 from Milone & MacBroom, Inc. that will remain in the floodplain post-construction will be flood-proofed by the most appropriate method if the owner of the structure provides authorization to do so. A report indicating what structures were removed will be provided to this office after the completion of each of the four project phases.

18. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile siltfences, hay bales or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. These measures shall be capable of preventing erosion, of collecting sediment, suspended, and floating materials, and of filtering fine sediment. These devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location, in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

19. In order to fulfill the requirements of under Section 106 of the Historic Preservation Act the following must be completed before any work may occur at Falcon Park:

A) Additional documentation must be provided to the SHPO in a final archaeological reconnaissance report to "better establish the association of the former occupants of the former house with the recovered artifact assemblage" for site 80-5 (Falcon Park compensatory flood storage area) as stated in the June 29, 2012 letter to the Corps. This information is intended to "confirm [the site's] tenant-farm status conclusively and perhaps learn the identity of the tenants who lived there" as stated in the letter dated February 27, 2012 from the SHPO to Archeological & Historical Services, Inc. No work may begin in this area until the final report is submitted to the SHPO, SHPO provides concurrence and a copy is submitted to this office.

B) A Phase II Intensive Archaeological Survey must be conducted for Site 80-8 and the results must be coordinated with this office and the SHPO before any authorized work may commence in the vicinity of the site.

C) Cooper Street Bridge, Amtrak over Harbor Brook Bridge, Meriden Electric Light Co. Plant, New Departure House, and Broad Street Bridges must undergo photographic documentation prior to their alteration or demolition. The photo documentation must be submitted to the SHPO and this office and the SHPO must provide agreement with the documentation before the structures may be altered or demolished.

HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT

HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

60% DESIGN / REGULATORY SUBMISSION SET
FOR PERMITTING ONLY. NOT FOR CONSTRUCTION.

FEB 2011

REVISED THROUGH: APRIL 18, 2012

- **FLOOD CONTROL IMPLEMENTATION AGENCY**

Philip Ashton - CHAIRMAN
Dwight L. Needels
Walter Hylwa
Frank Lewandowski
George McGoldrick
Paul Miller
David White

- **CITY REPRESENTATIVES**

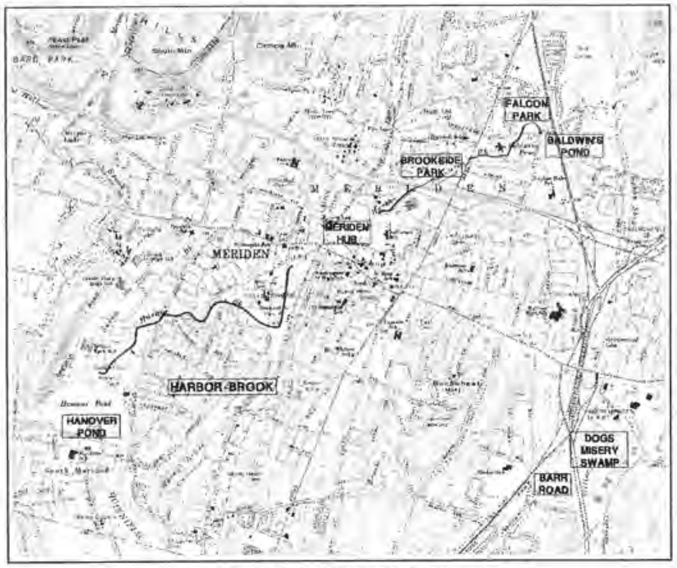
Michael Rohde
MAYOR

Matthew C. Dominello, Sr.
DEPUTY MAYOR

Lawrence J. Kendzior
CITY MANAGER

Mark Zebora
DIRECTOR OF PARKS, RECREATION AND PUBLIC BUILDINGS

Robert J. Bass, P.E.
DIRECTOR OF PUBLIC WORKS



PROJECT SITE VICINITY MAP:

SCALE: 1"=2,000'
0 1,000' 2,000'

LIST OF DRAWINGS:

MMI# 1261-14-20

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99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
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US Army Corps
of Engineers ®
New England District

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

1. Report completion date for Preliminary Jurisdictional Determination (JD):

May 15, 2012

2. Name and Address of Person Requesting Preliminary JD:

City of Meriden, Department of Public Works
142 East Main Street, Meriden, CT

3. District office, file name and number: NAE-2007-2588

4. Project location(s) and background information:

See attached table of waters and wetlands

State: CT County: New Haven City: Meriden
Coordinates of site (lat/long in degree decimal format):
Beginning Lat. 41 32 50 ° N, Long. 72 46 78 ° W
End Lat. 41 31 25 ° N, Long. 72 49 51 ° W
Universal Transverse Mercator: 18

Name of nearest waterbody: Harbor Brook

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 20,000 linear feet: 15 width (ft) and/or acres.
Cowardin Class: Riverine
Stream Flow: Perennial
Wetlands: 2 acres
Cowardin Class: Palustrine

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal:
Non-Tidal:

5. Review performed for site evaluation (check all that apply):
☒ Office (Desk) Determination. Date: December 2011
☒ Field Determination. Date(s): February 2012

a. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

b. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

c. Supporting Data. Data reviewed for Preliminary JD - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey Hydrologic Atlas:
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date):
or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Amy Moen 6/15/12
NAME Date
Regulatory Project Manager

NAME Date
COMPANY IF APPLICABLE

DELETE:
Signature and date of
Regulatory PM (Required)

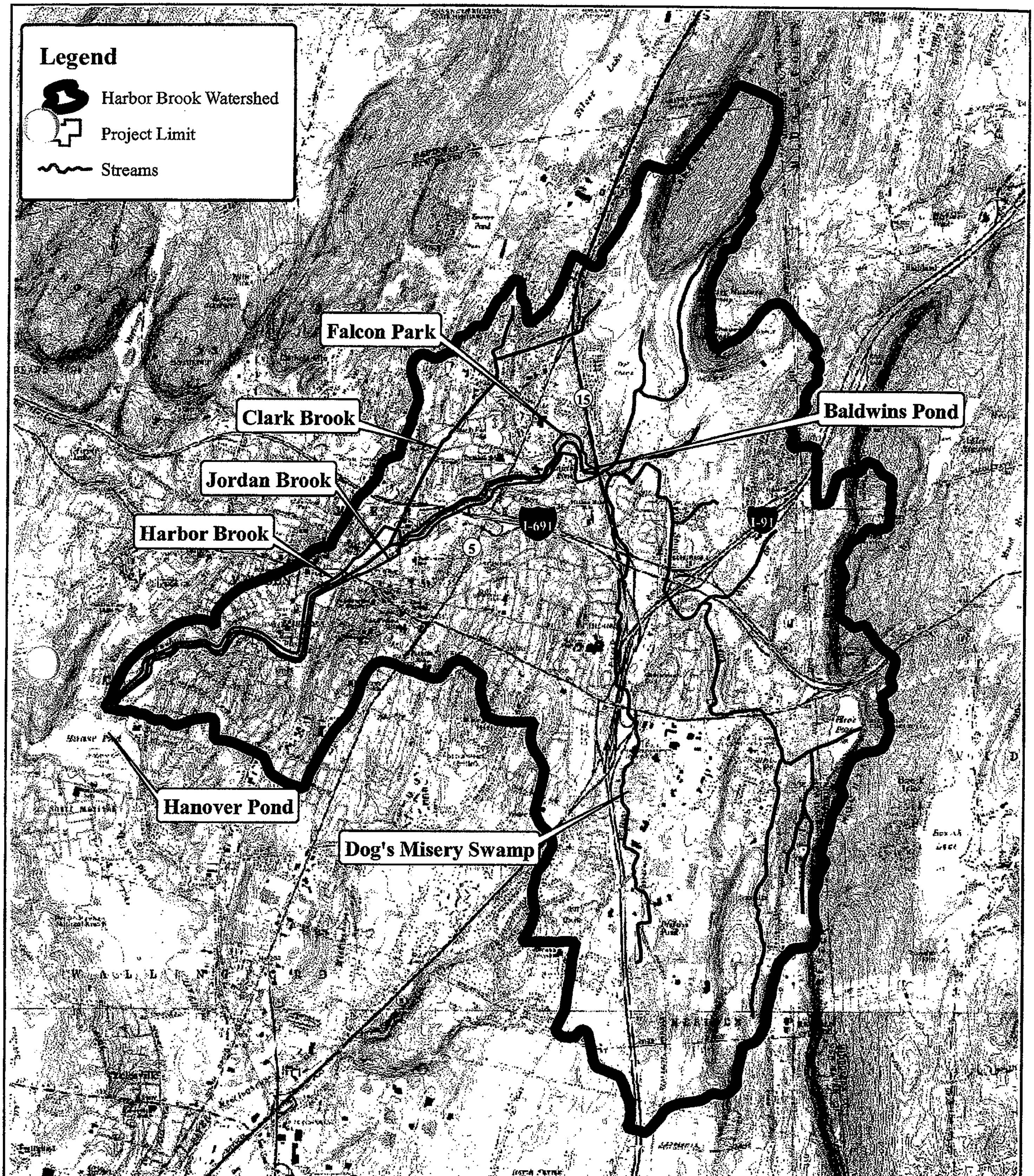
DELETE:
Signature and date of person
person requesting preliminary JD
(Required, unless obtaining
the signature is impracticable)

WETLAND AND WATERS TABLE

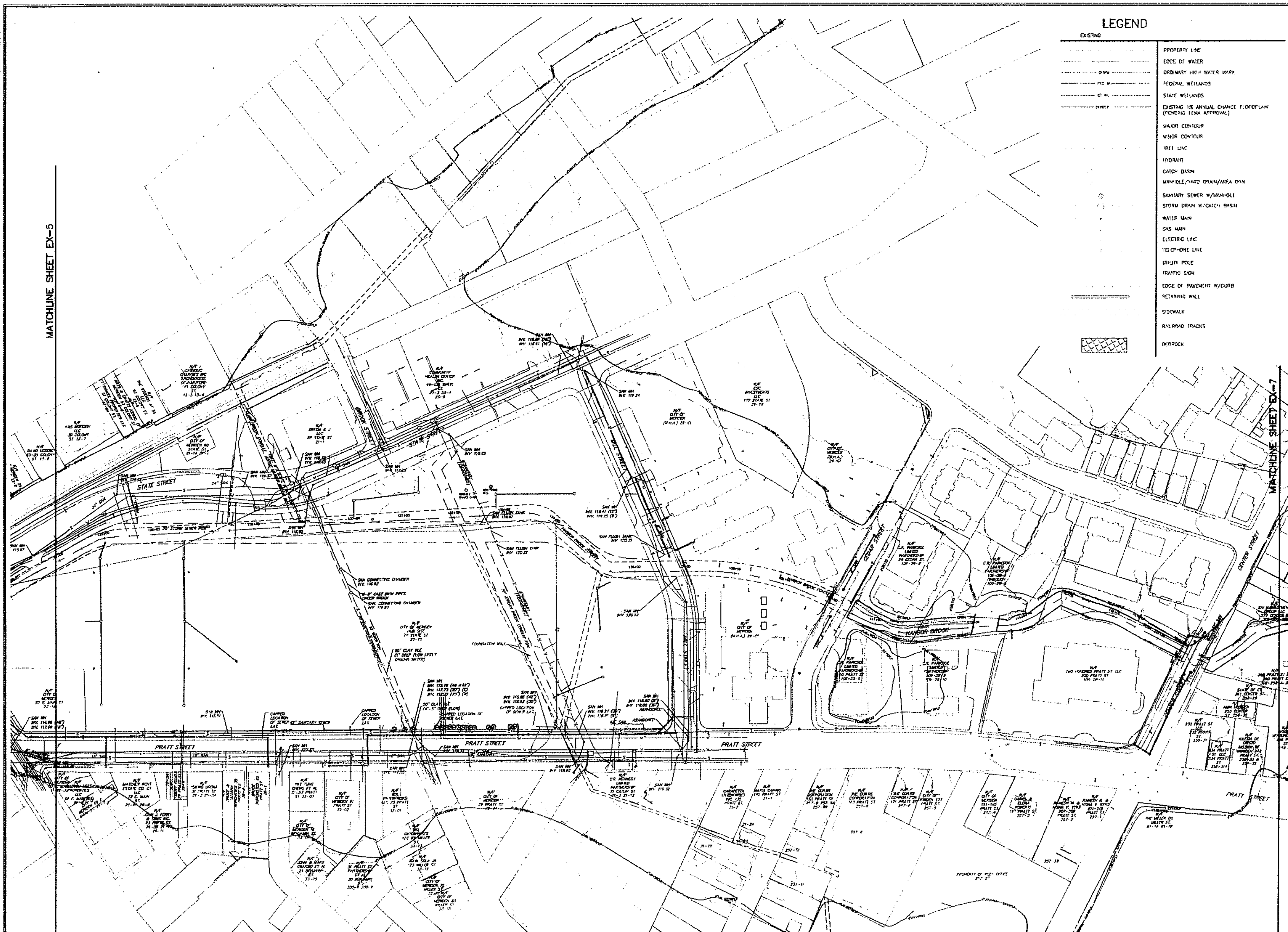
Water #	Water Name	Cowardin	Type	Lat.	Long.	Estimate aquatic resource in review area SF	Estimate aquatic resource in review area LF	Class of aquatic resource
1	Harbor Brook	Riverine	Perennial	41 32 50	72 49 51		20,000	Non-Section 10 WOUS
2	Harbor Brook Wetlands	PFO	floodplain	41 31 28	72 49 46	~2 acres		Non-Section 10 wetland
						~2 acres	~20,000	

Notes:

1. Water ID can be either the applicant's or the Corps number.
2. Cowardin info can be found at:
   R:\REGDOCS\Jurisdiction
   R:\REGDOCS\Guidance & Useful Information
   R:\General\Resource-Reference Materials\Cowardin
3. Only use LF if applicable (e.g., pipeline project)



Engineering, Landscape Architecture and Environmental Science MILONE & MACBROOM® 99 Realty Drive Cheshire, Connecticut 06410 (203) 271-1773 Fax: (203) 272-9733 www.miloneandmacbroom.com	**Harbor Brook Flood Control and Linear Trail Project**	LOCATION: **Meriden, CT**
MMI#: 1261-14-20 MXD: H:\Attachment_B.mxd SOURCE: CT DEP, USGS	N **Project Location Map**	Map By: SMG Date: February 2011 Scale: 1"=4,000' SHEET: **Attachment B**



SITE PLAN - EXISTING CONDITIONS

HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT

HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

REVISIONS
03/02/2012

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NEB	BAM	JGM
DESIGNED	DRAWN	CHECKED

SCALE 1"=80'

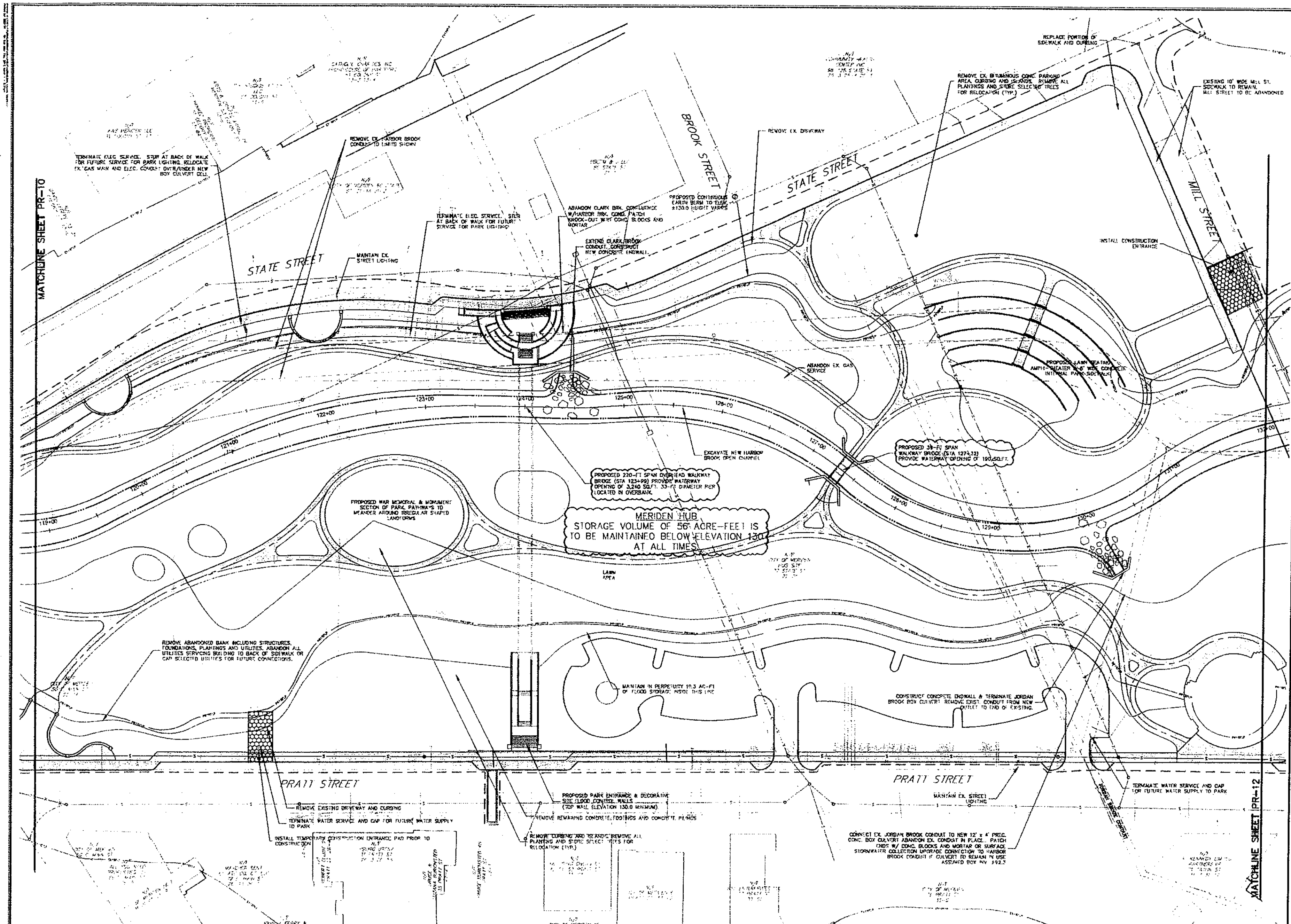
DATE FEB 2011

PROJECT NO. 1261-14-20

SHEET NO. 33 OF 84

EX-6

SHEET NO.



PROPOSED CONDITIONS AND S&E CONTROLS

HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT

HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

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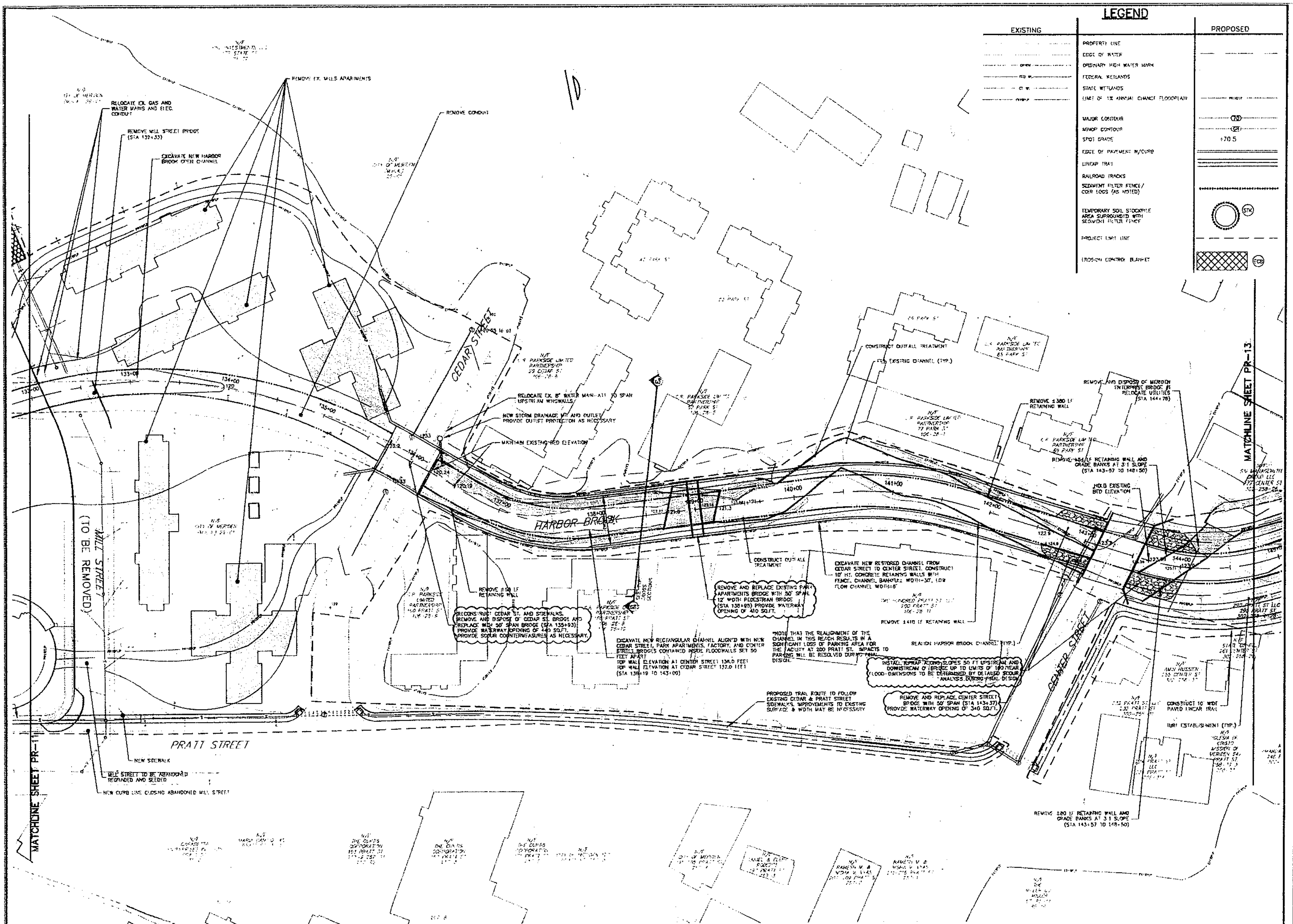
DESIGNED	DRAWN	CHECKED
NEB	BAM	JGM

SCALE: 1"=40'

DATE: FEB 2011

PROJECT NO. 1261-14-20

SHEET NO. PR-11



PROPOSED CONDITIONS AND S&E CONTROLS

HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT

HANOVER POND TO BALDWINS POND
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DESIGNED	DRAWN	CHECKED
NEB	BAM	JGM

SCALE 1"=40'
DATE FEB 2011
PROJECT NO. 1261-14-20
SHEET NO. 48 OF 84

PR-12

FLOOD SHELF PLANT LIST

SHADE TREES	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Acer rubrum	Red Maple	3.5"-4" CAL.	B&B, FULL & DENSE
				Acer saccharinum	Silver Maple	3.5"-4" CAL.	B&B, FULL & DENSE
				Betula nigra	River Birch	3.5"-4" CAL.	B&B, FULL & DENSE
				Quercus bicolor	Swamp White Oak	3.5"-4" CAL.	B&B, FULL & DENSE
				Quercus palustris	Pin Oak	3.5"-4" CAL.	B&B, FULL & DENSE
TREE SAPLINGS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Acer rubrum	Red Maple	5'-6' HT	CONTAINER
				Acer saccharinum	Silver Maple	5'-6' HT.	CONTAINER
				Betula nigra	River Birch	5'-6' HT	CONTAINER
				Populus deltoides	Eastern Cottonwood	5'-6' HT	CONTAINER
				Quercus bicolor	Swamp White Oak	5'-6' HT.	CONTAINER
				Quercus palustris	Pin Oak	5'-6' HT.	CONTAINER
				Salix nigra	Black Willow	5'-6' HT.	CONTAINER
SHRUBS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Alnus incana	Speckled	30"-36"	FULL & DENSE
				Cephalanthus occidentalis	Buttonbush	30"-36"	FULL & DENSE
				Cornus amomum	Silky Dogwood	30"-36"	FULL & DENSE
				Cornus racemosa	Gray Dogwood	30"-36"	FULL & DENSE
				Ilex verticillata	Winterberry	30"-36"	FULL & DENSE
				Rosa palustris	Swamp Rose	30"-36"	FULL & DENSE
				Salix discolor	Pussy Willow	30"-36"	FULL & DENSE
				Spirea tomentosum	Steeplebush	30"-36"	FULL & DENSE
				Vaccinium corymbosum	Highbush Blueberry	30"-36"	FULL & DENSE
				Viburnum dentatum	Arrowwood Viburnum	30"-36"	FULL & DENSE
HERBACEOUS PLUGS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE/ CONDITION	
				Alisma plantago-aquatica	Water Plantain	PLUG	
				Carex lurida	Lurid Sedge	PLUG	
				Carex stricta	Tussock Sedge	PLUG	
				Iris versicolor	Blue Flag Iris	PLUG	
				Juncus effusus	Soft Rush	PLUG	
				Nymphaea odorata	White Water Lily	PLUG	
				Pontederia cordata	Pickerelweed	PLUG	
				Sagittaria latifolia	Duck Potato	PLUG	
				Scirpus atrovirens	Green bulrush	PLUG	
				Scirpus cyperinus	Woolgrass	PLUG	

NOTE: QUANTITIES TO BE DETERMINED DURING FINAL DESIGN

FLOOD SHELF EMBANKMENT SEED MIX

NEW ENGLAND CONSERVATION/WILDLIFE MIX
SEED MIX Species: Big Bluestem (Andropogon gerardii), Switchgrass (Panicum virgatum), Little Bluestem (Schizachyrium scoparium), Canada Wild Rye (Elymus canadensis), Fox Sedge (Carex vulpinoidea), Partridge Pea (Chamaecrista fasciculata), Fringed Bromegrass (Bromus ciliatus), Pennsylvania Smartweed (Polygonum pensylvanicum), Common Milkweed (Asclepias syriaca), Showy Tick-trefoil (Desmodium canadense), New England Aster (Aster novae-angliae), Flat-top Aster (Aster umbellatus), Nodding Bur-Marigold (Bidens cernua).

RECOMMENDED APPLICATION RATE:
(1743 SQUARE FEET/ LB)

FLOOD SHELF SEED MIX

NEW ENGLAND WETMIX (WETLAND SEED MIX)
SEED MIX Species: Fox Sedge (Carex vulpinoidea), Bearded Sedge (Carex comosa), Lurid Sedge (Carex lurida), Soft Rush (Juncus effusus), Grass-leaved Goldenrod (Euthamia graminifolia), Boneset (Eupatorium perfoliatum), Hop Sedge (Carex lupulina), Blue Vervain (Verbena hastata), Nodding SedgZ E e (Carex gynandra), Green Bulrush (Scirpus atrovirens), Sensitive Fern (Onoclea sensibilis), Blue Flag Iris (Iris versicolor), Woolgrass (Scirpus cyperinus), Spotted Joe Pye weed (Eupatorium maculatum), Swamp Milkweed (Asclepias incarnata), Monkey Flower (Mimulus ringens), Soft-Stem Bulrush (Schoenoplectus tabernaemontani) (ex- S. validus), Hardstem Bulrush (Schoenoplectus acutus) (ex-Scirpus acutus), Nodding Bur Marigold (Bidens cernua), Flat-top Aster (Aster umbellatus)

RECOMMENDED APPLICATION RATE
(2500 SQUARE FEET/ LB)

PLANTING NOTES

1. EROSION CONTROLS SHALL BE INSTALLED, REPAIRED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD OF THE WETLAND MITIGATION OR UNTIL THE SITE IS FULLY STABILIZED BY VEGETATION (SEED MIX). EROSION CONTROLS SHALL THEN BE REMOVED FROM THE SITE.
2. A WETLAND SCIENTIST SHALL BE ON SITE TO MONITOR PLANTING AND GRADING OF THE WETLAND RESTORATION AREA TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
3. GRADING LINES DEPICTED ON THE PLAN ARE DRAWN SMOOTHLY. ACTUAL SURFACE GRADES ACROSS WETLAND 'FLOOR' SHALL REFLECT HUMMOCK AND HOLLOW TOPOGRAPHY OF NATURAL WETLANDS.
4. 12 INCHES OF SUPER ENRICHED TOPSOIL (MUST CONTAIN MINIMUM 12% ORGANIC CARBON BY WEIGHT) SHALL BE INSTALLED OVER THE ROUGH SUB GRADE.
5. THE SURFACE AND GROUNDWATER LEVELS SHALL BE MONITORED PRIOR TO PERMANENT PLANTING. AS A RESULT OF ACTUAL WATER LEVELS, THE CORRESPONDING PLANTINGS MAY NEED TO BE ADJUSTED IN THE FIELD.
6. ALL WETLAND PLANTINGS ARE TO BE PLANTED ONLY AFTER STABILIZATION OF CONTRIBUTING DRAINAGE AREAS.
7. WETLAND PLANTINGS SHALL BE LIMITED TO THE PERIODS OF APRIL 15 - JULY 15, OR AUTUMN. ONLY QUALITY NATIVE PLANTS FROM A NURSERY SHALL BE USED.
8. ALL WOODY PLANT MATERIAL SHALL BE PROVIDED IN CONTAINERS THAT ARE APPROPRIATELY SIZED FOR THE SPECIFIED PLANT. HERBACEOUS PLANT MATERIAL SHALL BE PLUGS AND CONTAINERIZED WETLAND PLANTS SHALL HAVE BEEN GROWN IN A LOCAL/REGIONAL NURSERY.
9. SUPPLEMENTAL HERBACEOUS PLANTINGS SHALL BE CONCENTRATED IN GROUPINGS TO BE DETERMINED. HERBACEOUS PLANTINGS TO BE PLUGS TWO FOOT ON CENTER. SHRUB PLANTINGS TO BE 36" O.C. (DEPENDENT UPON SPECIES).
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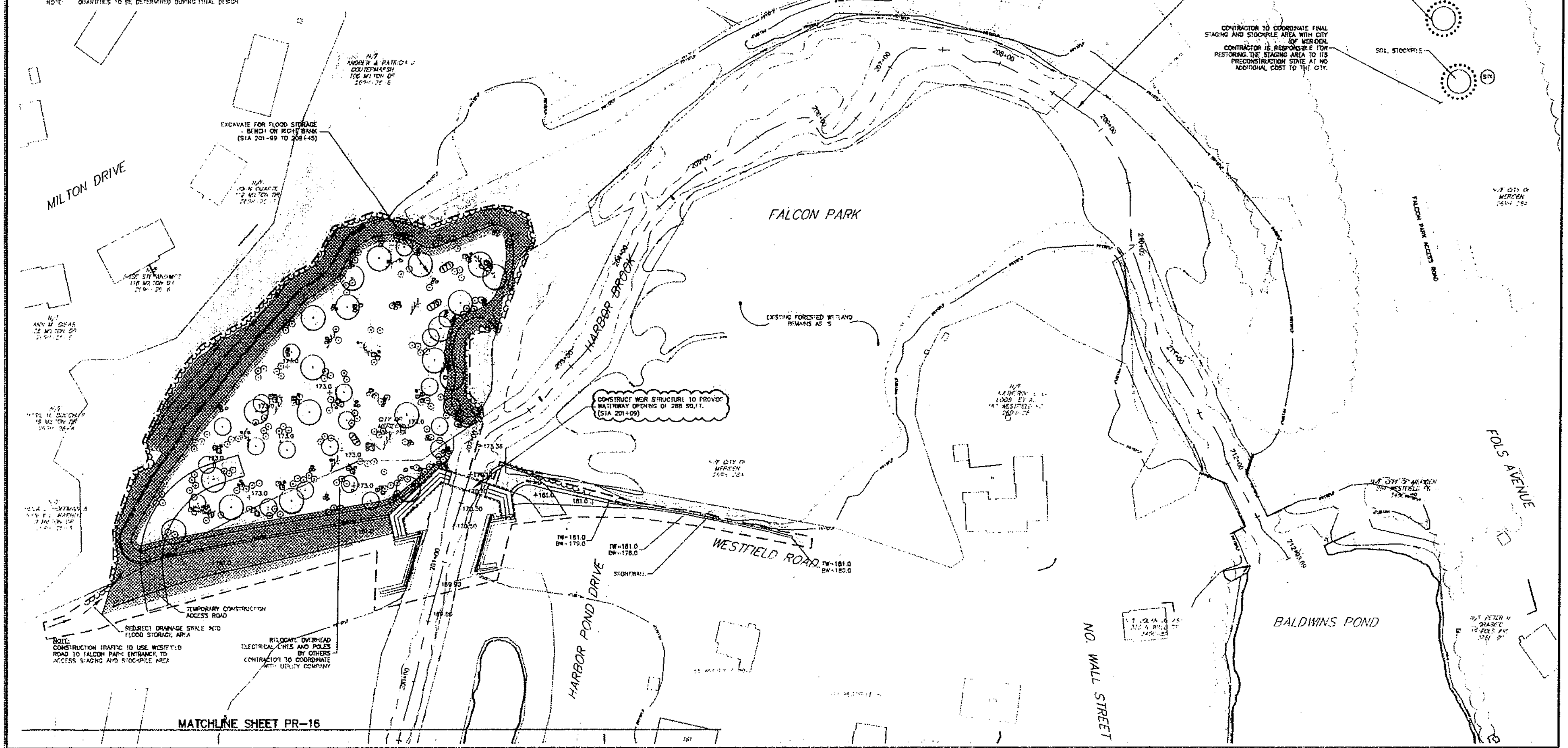
11. THE SOILS IN THE WETLAND RESTORATION AREAS SHALL BE SEEDED WITH DESIGNATED WETLAND AND UPLAND SEED MIXES AS NOTED IN PLANT LIST. ALL PLUGS & SEED MIXES SPECIFIED BY NEW ENGLAND WETLAND PLANTS INC. 820 MAIN ST. AMHERST, MA 01002 (413) 256-1752 OR APPROVED EQUIVALENT.
12. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
13. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE WETLAND SCIENTIST. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.



PROPOSED CONDITIONS AND S&E CONTROLS
HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT
HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

REVISIONS: 03/02/2012

MILONE & MACBROOM
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(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

DESIGNED	DRAWN	CHECKED
NEB	BAM	JGM

SCALE: 1"=40'
DATE: FEB 2011
PROJECT NO. 1261-14-20
SHEET NO. 54 OF 81

PR-17

PLANT LIST

SHADE TREES	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Acer rubrum	Red Maple	3.5"-4" CAL.	B&B, FULL & DENSE
				Acer saccharinum	Silver Maple	3.5"-4" CAL.	B&B, FULL & DENSE
				Quercus bicolor	Swamp White Oak	3.5"-4" CAL.	B&B, FULL & DENSE
				Quercus palustris	Pin Oak	3.5"-4" CAL.	B&B, FULL & DENSE
TREE SAPLINGS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Acer rubrum	Red Maple	5'-6' HT.	CONTAINER
				Acer saccharinum	Silver Maple	5'-6' HT.	CONTAINER
				Quercus bicolor	Swamp White Oak	5'-6' HT.	CONTAINER
				Quercus palustris	Pin Oak	5'-6' HT.	CONTAINER
				Salix nigra	Black Willow	5'-6' HT.	CONTAINER
SHRUBS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
				Alnus incana	Speckled	30"-36"	FULL & DENSE
				Cephalanthus occidentalis	Buttonbush	30"-36"	FULL & DENSE
				Cornus amomum	Silky Dogwood	30"-36"	FULL & DENSE
				Ilex verticillata	Winterberry	30"-36"	FULL & DENSE
				Rosa palustris	Swamp Rose	30"-36"	FULL & DENSE
				Salix discolor	Pussy Willow	30"-36"	FULL & DENSE
				Sambucus canadensis	Common Elderberry	30"-36"	FULL & DENSE
				Spirea tomentosum	Steeplebush	30"-36"	FULL & DENSE
				Vaccinium corymbosum	Highbush Blueberry	30"-36"	FULL & DENSE
				Viburnum dentatum	Arrowwood Viburnum	30"-36"	FULL & DENSE
HERBACEOUS PLUGS	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE/ CONDITION	
				Alisma plantago-aquatica	Water Plantain	PLUG	
				Carex lurida	Lurid Sedge	PLUG	
				Carex stricta	Tussock Sedge	PLUG	
				Iris versicolor	Blue Flag Iris	PLUG	
				Juncus effusus	Soft Rush	PLUG	
				Pontederia cordata	Pickerelweed	PLUG	
				Sagittaria latifolia	Duck Potato	PLUG	
				Scirpus atrovirens	Green bulrush	PLUG	
				Scirpus cyperinus	Woolgrass	PLUG	

NOTE: QUANTITIES TO BE DETERMINED DURING FINAL DESIGN

UPLAND SEED MIX

NEW ENGLAND CONSERVATION/WILDLIFE MIX

SEED MIX Species: Big Bluestem (Andropogon gerardi), Switchgrass (Panicum virgatum), Little Bluestem (Schizachyrium scoparium), Canada Wild Rye (Elymus canadensis), Fox Sedge (Carex vulpinoidea), Partridge Pea (Chamaecrista fasciculata), Fringed Bromegrass (Bromus ciliatus), Pennsylvania Smartweed (Polygonum pensylvanicum), Common Milkweed (Asclepias syriaca), Showy Tick-Trefoil (Desmodium canadense), New England Aster (Aster novae-angliae), Flat-top Aster (Aster umbellatus), Nodding Bur-Marigold (Bidens cernua).

RECOMMENDED APPLICATION RATE:
(1743 SQUARE FEET/ LB)

WETLAND SEED MIX

NEW ENGLAND WETMIX (WETLAND SEED MIX)

SEED MIX Species: Fox Sedge (Carex vulpinoidea), Bearded Sedge (Carex comosa), Lurid Sedge (Carex lurida), Soft Rush (Juncus effusus), Grass-leaved Goldenrod (Euthamia graminifolia), Boneset (Eupatorium perfoliatum), Hop Sedge (Carex lupulina), Blue Vervain (Verbena hastata), Nodding SedgZ E e (Carex gynandra), Green Bulrush (Scirpus atrovirens), Sensitive Fern (Onoclea sensibilis), Blue Flag Iris (Iris versicolor), Woolgrass (Scirpus cyperinus), Spotted Joe Pye weed (Eupatorium maculatum), Swamp Milkweed (Asclepias incarnata), Monkey Flower (Mimulus ringens), Soft-Stem Bulrush (Shoenoplectus tabernaemontani) (ex- S. validus), Hardstem Bulrush (Schoenoplectus acutus) (ex-Scirpus acutus), Nodding Bur Marigold (Bidens cernua), Flat-top Aster (Aster umbellatus)

COMMON REED MANAGEMENT AND REMOVAL

1. THE SMALL PATCHES SHALL BE REMOVED BY EXCAVATION.
2. CONTRACTOR SHALL BE REQUIRED TO EXCAVATE TO A DEPTH OF TWO FEET BELOW THE SOIL SURFACE, OR AS DIRECTED BY THE SUPERVISING WETLAND SCIENTIST, AND APPROXIMATELY THREE FEET BEYOND THE OUTER PLANT STALKS.
3. ALL EXCAVATED MATERIAL FROM THE COMMON REED REMOVAL AREAS SHALL BE STOCKPILED AND TRANSPORTED TO NEARBY LANDFILL. PLEASE NOTE THAT THIS MATERIAL SHALL NOT BE MIXED OR REUSED ON SITE.

WETLAND MITIGATION PLANT NOTES

1. EROSION CONTROLS SHALL BE INSTALLED, REPAIRED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD OF THE WETLAND MITIGATION OR UNTIL THE SITE IS FULLY STABILIZED BY VEGETATION (SEED MIX). EROSION CONTROLS SHALL THEN BE REMOVED FROM THE SITE.
2. A WETLAND SCIENTIST SHALL BE ON SITE TO MONITOR PLANTING AND GRADING OF THE WETLAND RESTORATION AREA TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
3. GRADING LINES DEPICTED ON THE PLAN ARE DRAWN SMOOTHLY, ACTUAL SURFACE GRADES ACROSS WETLAND 'FLOOR' SHALL REFLECT HUMMOCK AND HOLLOW TOPOGRAPHY OF NATURAL WETLANDS.
4. 12 INCHES OF SUPER ENRICHED TOPSOIL (MUST CONTAIN MINIMUM 12% ORGANIC CARBON BY WEIGHT) SHALL BE INSTALLED OVER THE ROUGH SUB GRADE.
5. THE SURFACE AND GROUNDWATER LEVELS SHALL BE MONITORED PRIOR TO PERMANENT PLANTING. AS A RESULT OF ACTUAL WATER LEVELS, THE CORRESPONDING PLANTINGS MAY NEED TO BE ADJUSTED IN THE FIELD.
6. ALL WETLAND PLANTINGS ARE TO BE PLANTED ONLY AFTER STABILIZATION OF CONTRIBUTING DRAINAGE AREAS.
7. WETLAND PLANTINGS SHALL BE LIMITED TO THE PERIODS OF APRIL 15 - JULY 15, OR AUTUMN ONLY. QUALITY NATIVE PLANTS FROM A NURSERY SHALL BE USED.
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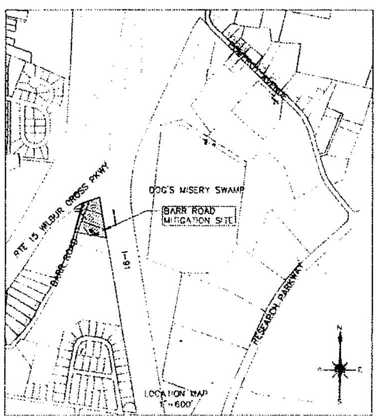
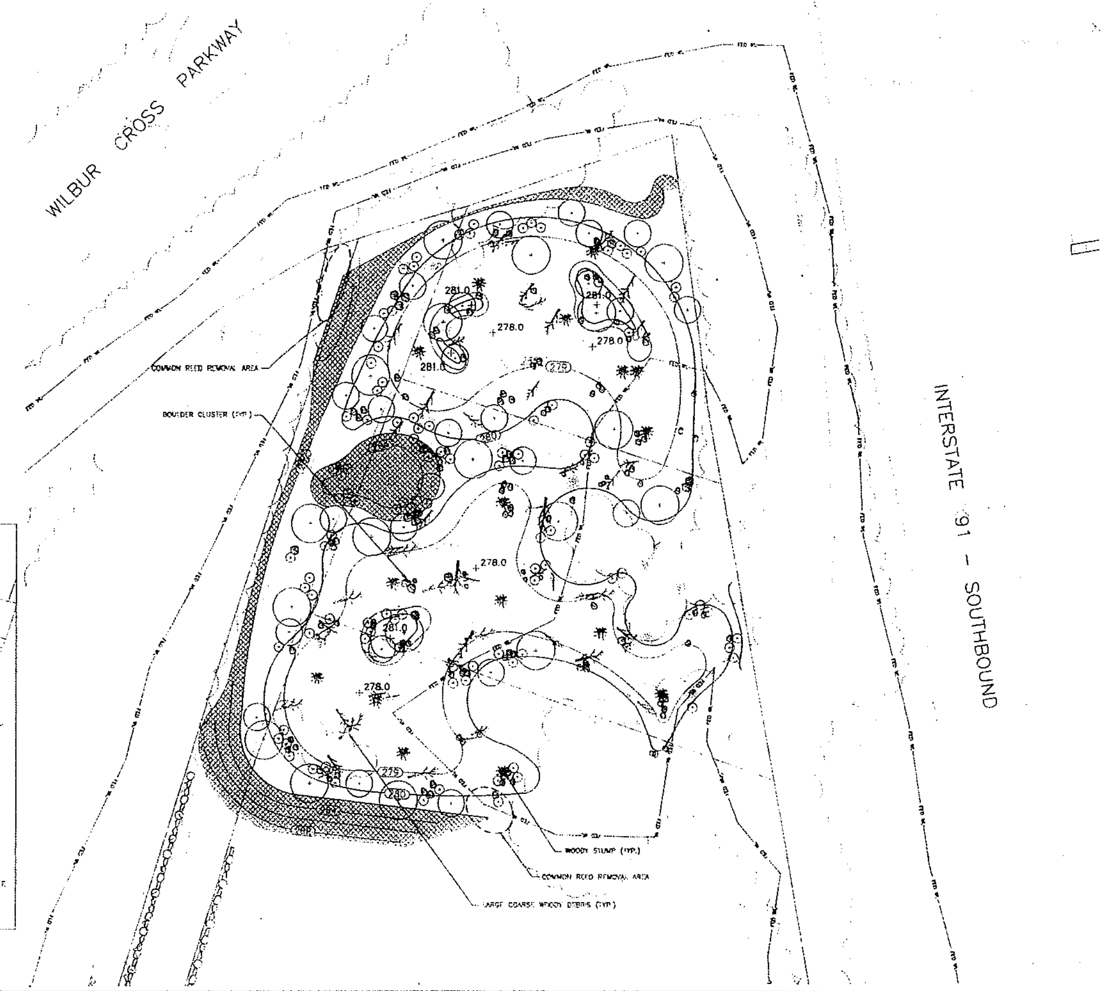
LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	EDGE OF WATER	
OHWM	ORDINARY HIGH WATER MARK	
FED WL	FEDERAL WETLANDS	
ST WL	STATE WETLANDS	
	LIMIT OF 100-YEAR FLOODPLAIN	
	FEMA DELINEATED FLOODWAY	
	MAJOR CONTOUR	70
	MINOR CONTOUR	68
	SPOT GRADE	+70.5
	TREE LINE	
	SEDIMENT FILTER FENCE/ COIR LOGS (AS NOTED)	
	TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE	STK





REVISIONS
03/02/2012

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MITIGATION PLAN - DOG MISERY SWAMP AT BARR ROAD
HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT
HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

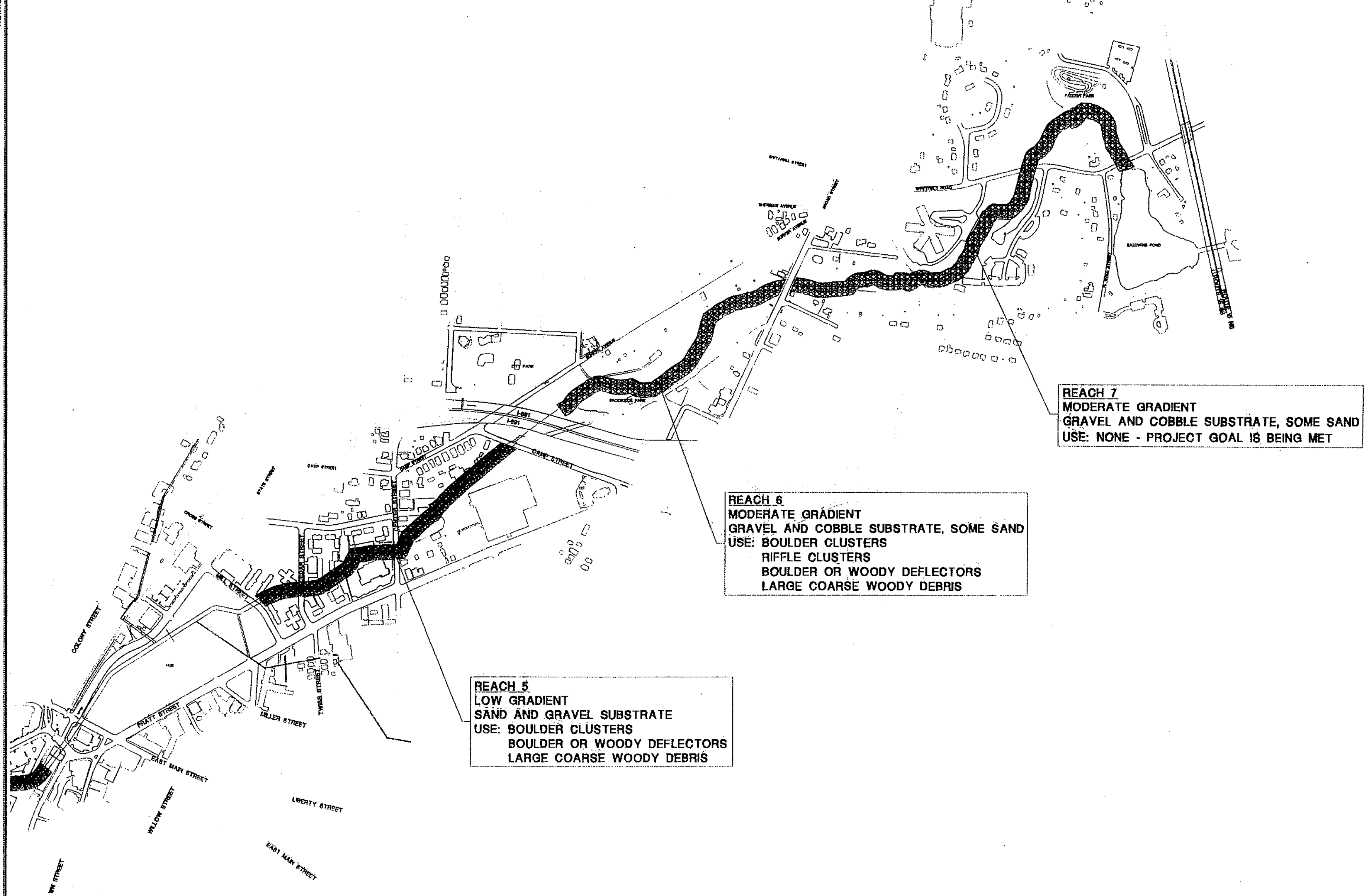
DESIGNED	DRAWN	CHECKED
MJS/MTD	MTD	JGM

SCALE 1"=30'
DATE FEB 2011
PROJECT NO. 1261-14-20
SHEET NO. 55 OF 64

MI-1
SHEET NO.

ALL FISHERY AND IN-STREAM HABITAT IMPROVEMENTS SHALL BE REVIEWED AND APPROVED BY CT DEEP-FISHERY BIOLOGISTS PRIOR TO CONSTRUCTION.

FISHERY AND IN-STREAM HABITAT FEATURE DETAILS ARE DEPICTED ON PLAN SHEET D-1.



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03/02/2012

FISHERY AND IN-STREAM FEATURE RESTORATION PLAN
HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT
HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION

NEB DESIGNED	BAM DRAWN	JGM CHECKED
SCALE 1"=300'		
DATE FEB 2011		
PROJECT NO. 1261-14-20		
SHEET NO. 93 OF 94		

H-2

TURTLE MANAGEMENT PLAN

IN ORDER TO ALLOW FOR THE HARBOR BROOK FLOOD CONTROL PROJECT AND LINEAR TRAIL CONSTRUCTION TO OCCUR AND TO PROVIDE MAXIMUM PROTECTION OF THE TURTLES, MMI'S WILDLIFE BIOLOGISTS HAVE DEVELOPED A MANAGEMENT PLAN THAT WILL BE UTILIZED BY THE CITY TO HELP PROTECT THE BOX TURTLE DURING THE COURSE OF THE PROJECT. THE TURTLE MANAGEMENT PLAN HAS BEEN DESIGNED TO BE CONSISTENT WITH THE CTDEEP'S TYPICAL TURTLE MANAGEMENT RECOMMENDATIONS FOR SAID SPECIES. THE TURTLE MANAGEMENT PLAN INCLUDES THE FOLLOWING:

- CONDUCT A SWEEP OF THE PROJECT AREA BY A QUALIFIED WILDLIFE BIOLOGIST PRIOR TO INSTALLATION OF SILT FENCE AND/OR SILT SOXX.
- INSTALL SILT FENCING AND/OR SILT SOXX AROUND THE WORK AREA PRIOR TO THE START OF ANY CONSTRUCTION.
- CONDUCT A SECOND SWEEP OF THE PROJECT AREA BY A QUALIFIED WILDLIFE BIOLOGIST PRIOR TO CONSTRUCTION.
- AREAS THAT ARE SELECTED FOR SOIL STOCKPILES AND OTHER CONSTRUCTION MATERIAL PILES SHALL BE SURROUNDED BY SILT FENCE TO PREVENT TURTLES FROM USING SAID PILES FOR EGG LAYING.
- THE CONTRACTOR SHALL BE APPRISED OF THE POTENTIAL PRESENCE OF BOX TURTLES WITHIN THE PROJECT SITE AND BE GIVEN A DESCRIPTION OF THE TURTLE FOR PROPER IDENTIFICATION PURPOSES.
- THE COIR LOGS/SILT SOXX PROPOSED ALONG THE BANKS OF HARBOR BROOK SHALL BE PERIODICALLY MONITORED DURING CONSTRUCTION TO VERIFY THAT BOX TURTLES HAVE NOT BECOME TANGLED WITHIN THE LOGS/SOXX. ANY TURTLE CAUGHT IN THE LOGS/SOXX SHALL BE CAREFULLY UNTANGLED, MOVED, UNHARMED TO AN AREA IMMEDIATELY OUTSIDE OF THE PROJECT AREA AND IN THE SAME DIRECTION IT WAS WALKING.
- ANY BOX TURTLES DISCOVERED INSIDE THE PROJECT AREA SHALL BE CAREFULLY MOVED, UNHARMED, TO AN AREA IMMEDIATELY OUTSIDE OF THE SILT FENCE AND IN THE SAME DIRECTION IT WAS WALKING.
- NO MACHINERY OR HEAVY VEHICLES SHALL BE PARKED IN BOX TURTLE HABITAT. PARKING FOR CONSTRUCTION EQUIPMENT SHALL BE CONFINED TO THE SILT FENCE LIMITS.
- WORK CONDUCTED DURING THE EARLY MORNING AND LATE EVENING HOURS SHOULD OCCUR WITH SPECIAL CARE NOT TO HARM BASKING OR FORAGING INDIVIDUALS.
- AT THE END OF CONSTRUCTION ALL SILT FENCE SHALL BE REMOVED.
- BOX TURTLE EDUCATIONAL SIGNAGE SHALL BE INSTALLED ALONG THE TRAIL AT SELECT LOCATIONS TO EDUCATE AND INCREASE AWARENESS FOR THE PROTECTION OF THE BOX TURTLE AND ITS HABITAT.

THE CITY WILL BE RESPONSIBLE FOR IMPLEMENTING AND ADMINISTERING THE ABOVE PLAN THROUGHOUT ALL PHASES OF THE PROJECT THAT ARE COMPLETED BETWEEN HANOVER POND AND COE AVENUE BRIDGE. THE CITY IS COMMITTED TO PROVIDING EDUCATIONAL SIGNAGE ALONG THIS PROJECT REACH UNDER THE DIRECTION OF PROJECT WILDLIFE BIOLOGISTS AND CTDEEP.

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	EDGE OF WATER	
	MAJOR CONTOUR	(70)
	MINOR CONTOUR	(65)
	TREE LINE	
	LINEAR TRAIL	
	SEDIMENT FILTER FENCE	
	COIR LOGS	
	TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE	STK

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TURTLE HABITAT MANAGEMENT PLAN

HARBOR BROOK FLOOD CONTROL & LINEAR TRAIL PROJECT

HANOVER POND TO BALDWINS POND
MERIDEN, CONNECTICUT

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DESIGNED	DRAWN	CHECKED
MJS	BAM	JGM

SCALE 1"=100'

DATE FEB 2011

PROJECT NO. 1261-14-20

SHEET NO.

H-3

TASK 210:
SUBSURFACE SITE INVESTIGATION

REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK

MERIDEN, CONNECTICUT

CONNDOT PROJECT NO. 79-212
CONNDOT BRIDGE NO. 04185

Prepared For:

State of Connecticut
Department of Transportation
Newington, Connecticut 06131

Prepared by:

RED TECHNOLOGIES, LLC
10 Northwood Drive
Bloomfield, Connecticut 06002
Project No. 14-385

FEBRUARY 2015

QUALITY ASSURANCE/QUALITY CONTROL

TASK 210:
SUBSURFACE SITE INVESTIGATION

Replacement of Center Street Bridge over Harbor Brook
Conn DOT Project No. 79-212
Center Street Bridge No. 04185
Meriden, Connecticut

The following personnel have reviewed this report for accuracy, content and quality of presentation:

2-12-2015

Todd Mahler Date
Project Manager

2-12-2015

Louis H. Muratore Date
Division Manager/Senior Project Manager

TABLE OF CONTENTS

1.0 INTRODUCTION

RED TECHNOLOGIES, LLC (RED) on behalf of WMC Consulting Engineers (WMC) has conducted a Task 210: Subsurface Site Investigation in association with the Replacement of Center Street Bridge over Harbor Brook ("Site") located in Meriden, Connecticut. A Site Location Map is presented as **Figure 1**.

Based upon a review of the Preliminary Design plans with WMC, the project will include the replacement of the existing bridge (ConnDOT Bridge No. 04185) with a fifty (50) foot clear span precast concrete box beam structure. This bridge replacement is part of an overall city wide Harbor Brook Flood Control Project, and as a result, there will be hydraulic improvements to reduce future flooding. These improvements include widening of the bridge, channel re-alignment and grading, utility and drainage updates and relocations, and roadway repaving within the disturbed area (approximately four hundred (400) feet).

According to the latest (Year 2001) State of Connecticut Department of Transportation bridge inspection report for Center Street Bridge, the existing stone masonry arch has an overall rating of fair (5 out of a possible 9), indicating the need for minor to significant rehabilitation. A visual inspection confirmed these findings, which included concrete sidewalk cracks, spalling and differential settlement, mortar loss, and voids throughout the existing arch. Additionally, it has been determined the existing structure is hydraulically inadequate.

The purpose of this Task 210: Subsurface Site Investigation is to verify the absence or presence and location of subsurface contamination, and to assess the potential pollutant soil, sediment and groundwater impacts to be encountered during excavation activities associated with the construction of the new bridge, roadway and storm water conveyance modifications. A Site Plan depicting the environmental sampling locations referenced throughout this report is attached as **Figure 2**.

2.0 SITE DESCRIPTION

The City of Meriden and the ConnDOT is proposing the replacement of the existing bridge (ConnDOT Bridge No. 04185) with a fifty (50) foot clear span precast concrete box beam structure located in Meriden, Connecticut. The Site is located in a well-developed mixed residential/industrial area in the central section of the town of Meriden, Connecticut, approximately 1/3 of a mile south of Interstate 691.

Center Street generally traverses in a north-south direction from East Main Street to the south to Colony Street to the north. Center Street carries one lane of bi-directional traffic and is approximately twenty five (25) feet in width at the bridge. Overhead utility lines cross along the western side of the bridge. Subsurface water, gas and sewer lines are presumed to cross Harbor Brook below the bridge and/or roadway deck.

3.0 ENVIRONMENTAL SETTING

3.1 Geology

Based on information referenced on the Connecticut Department of Energy and Environmental Protection (CTDEEP) "Surficial Materials Map" the area within the project limits are composed of gravel and sand within individual layers and as alternating layers. Sand and gravel layers generally range from 25 to 50 percent gravel particles and from 50 to 75 percent sand particles. Layers are well to poorly sorted; bedding may be distorted and faulted due to postdepositional collapse. It is likely that some deposits within this map unit actually are gravel or sand and gravel overlying sand. It is less likely that some of these deposits are sand fluvial deposits or delta-topset beds (Stone et. al.,1992).

Based on information obtained during subsurface investigation activities, the overburden material at the Site is generally composed of dark reddish-brown medium to fine sands overlying reddish-brown silts and clay. The stratigraphic change generally occurs at a depth of approximately four feet (4) below ground surface (ft bgs) across the Site.

3.2 Water Quality Classifications

According to the CTDEEP, the project site is located in a "GB" groundwater area. The "GB" classification is designated for groundwater that has been degraded due to regional usage and is not suitable for potable use without treatment.

Harbor Brook is listed as a Class "B" inland surface water body. The Class "B" surface water classification is assigned to: fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

4.0 REGULATORY CRITERIA

The Remedial Standard Regulations (RSRs) form the basis for evaluation of Site conditions with respect to environmental impacts and the associated risk factors to human health and the environment. The CTDEEP adopted the revised RSRs (Sections 22a-133k-1 to 3 and 22a-133q-1) as of June 27, 2013 and are used to determine whether sufficient remediation has been conducted at sites that are required by statute, regulation or administrative order to be remediated, or for those sites that are remediated through a formal voluntary remediation process.

The RSRs provide: (1) baseline specific criteria that may be used at any site to determine whether or not remediation is necessary, (2) self-implementing alternatives to the baseline criteria for specific circumstances, (3) self-implementing exceptions to the baseline criteria for specific circumstances, and (4) an opportunity to request approval of site-specific alternatives to the self-implementing standards and the options for remediation from the CTDEEP Commissioner.

4.1 Applicable Regulatory Criteria

The groundwater beneath the Site is classified by the CTDEEP as "GB". A "GB" groundwater classification indicates that groundwater has been degraded due to regional usage and is not suitable for potable use without treatment.

Soil Criteria: Based on the groundwater classification, the following Connecticut RSR criteria are applicable to ***soils*** on the Site:

- <u>Residential (Res) Direct Exposure Criteria (DEC)</u>: The Res DEC are applicable to soils located within fifteen (15) feet of the ground surface.
- <u>GB Pollutant Mobility Criteria (PMC)</u>: The GB PMC is applicable to soils located above the seasonal-low water table.

<u>Residential Direct Exposure Criteria</u>

The purpose of the Res DEC is to protect human health from risks associated with the direct contact with or ingestion of various common soil contaminants. As previously stated, the Res DEC are applicable to soil within approximately fifteen (15) feet of the ground surface. Concentrations of contaminants are evaluated based upon mass-based analyses and different criteria are established for residential and industrial/commercial properties. The use of the less stringent commercial/industrial standards requires the implantation of an environmental land use restriction.

The Res DEC is not applicable to inaccessible soils, including soil more than four (4) feet below the ground surface, two feet below pavement greater than three (3) inches thick, or below an existing building, provided that an Environmental Land Use Restriction (ELUR) is placed in effect for the property.

Pollutant Mobility Criteria

The purpose of the PMC is to evaluate the potential for contaminants to leach from the soil in concentrations that may degrade groundwater quality. Different numerical criteria are established for "GA" and "GAA" groundwater areas, versus "GB" groundwater areas. Since the Site is situated in a "GB" groundwater area, the less stringent criteria apply.

Groundwater Criteria: The following RSR criteria applicable to ***groundwater*** located within a GB area are:

- Surface-Water Protection Criteria (SWPC): The SWPC is applicable to ground water prior to it discharging into a surface-water body.
- Residential Ground-Water Volatilization Criteria (Res Vol): The Res Vol is applicable to VOCs in ground water within 15 feet of the ground surface or a building.

Surface Water Protection Criteria The purpose of the Surface Water Protection Criteria standards are to ensure that groundwater discharging to a surface water body will not adversely affect surface water quality.

Residential Volatilization Criteria The purpose of the Volatilization Criteria standard is to ensure that volatile organic compounds (VOCs) in groundwater do not pose an unacceptable risk to human health due to the inhalation of VOCs that may enter into a structure on the property. The Volatilization Criteria only apply when impacted groundwater is located within fifteen feet of the ground surface or any structure.

Please note groundwater concentration(s) will not be compared to RSR criteria for the purpose of this report as the ConnDOT has had numerous discussions with CTDEEP staff with regard to groundwater encountered during "Construction Projects" and the applicability of the RSRs to these situations. Based on the guidance provided by CTDEEP, groundwater samples collected for "Construction Projects" will be compared to the effluent limits for the *General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water* and the *General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Sanitary Sewer* to determine if Groundwater Areas of Environmental Concern (GW AOECs) exist within the project limits.

5.0 SUBSURFACE INVESTIGATION ACTIVITIES

RED pre-marked the Site and contacted Call Before You Dig (CBYD) on December 30, 2015 to identify utilities adjacent to proposed soil boring (SB) locations. Due to the close proximity of soil boring locations relative to subsurface utilities, RED provided oversight of ground penetrating radar (GPR) activities on January 6, 2015. GPR activities were conducted by Metric Earth Services of Milford, Connecticut.

Subsurface investigation activities were conducted between January 7 and January 19, 2015. Samples collected throughout the duration of this project were submitted to Phoenix Environmental Laboratories, Inc. located in Manchester, Connecticut (CT) for analysis of:

- Extractable Total Petroleum Hydrocarbons (ETPH, CT ETPH Method);
- Volatile Organic Compounds (VOCs, EPA Method 8260);
- Polynuclear Aromatic Hydrocarbons (PAHs, EPA Method 8270);
- Polychlorinated Biphenyls (PCBs, EPA Method 8082);
- Total 8 RCRA Metals (EPA Method 6010);
- Synthetic Precipitation Leaching Procedure for the 8 RCRA metals (6010 SPLP);
- Pesticides (EPA Method 8081); and
- Herbicides (EPA Method 8151)

A site plan depicting the sample locations is presented on **Figure 2**. A copy of the laboratory reports is provided in **Appendix C**.

5.1 Soil Borings & Soil Analyses

On January 7 and 16, 2015, fifteen (15) Geoprobe® borings (SB-1 through SB-15) were advanced to a maximum depth of ten (10) feet below ground surface (ft bgs) within the areas of anticipated construction activities for the proposed project. The Geoprobe® borings were advanced by Metric Earth Services of Milford, Connecticut under the direction of RED personnel.

The soil boring locations were advanced utilizing a four (4) foot long two (2) inch diameter macro core sampler with dedicated acetate liners. Soil boring logs were generated in the field by visually inspecting soil characteristics (color, type, moisture, presence of odors, staining, etc.). In addition, the soil samples were screened in the field for total volatile organic compounds utilizing a MiniRAE 3000 photoionization detector (PID). The soil boring log describes the soil types encountered, changes in soil stratigraphy, the depth to groundwater, the terminal depth of each boring and the PID response for each interval where a stratigraphic change was observed. Soil boring logs are attached as **Appendix A**.

Based upon field screening results and visual observations, one soil sample was collected from each soil boring location and submitted for laboratory analysis.

One soil boring (SB-5) encountered refusal at six (6)-inches bgs. The boring location was offset three (3) times in the general vicinity of the pre-cleared location before the boring location was abandoned. The decision to abandon the soil boring location was based on the close proximity of subsurface utilities. Therefore, no sample was collected from SB-5.

5.2 Sediment Sample Collection and Analyses

On January 9, 2015 three (3) sediment grab samples (SED-1 through SED-3) were collected adjacent to the Center Street Bridge. One (1) sediment sample (SED-1) was collected downstream of the bridge, one (1) sediment sample was collected directly below the bridge (SED-2), and one (1) sediment sample was collected upstream of the proposed construction area (SED-3).

5.3 Surface Water Sample Collection & Analyses

On January 9, 2015 two (2) surface water grab samples (SF-1 and SF-2) were collected from Harbor Brook adjacent to Center Street Bridge. The surface water samples SF-1 and SF-2 were collected upstream and downstream of the bridge and proposed construction area, respectively.

5.4 Groundwater Sample Collection & Analyses

On January 19, 2015 three (3) groundwater samples were collected from temporary groundwater monitoring wells (MW-1 through MW-3) from completed soil boring locations designated as SB-3, SB-15 and SB-11, respectively.

The temporary groundwater monitoring wells were advanced to approximately sixteen (16) ft bgs and were constructed of one (1) inch inner diameter (I.D.), 0.010 inch machine-slotted, polyvinylchloride (PVC) well screen attached with flush threaded joints to one (1) inch I.D. schedule 40 solid riser pipe. The boring annulus surrounding the screened interval was constructed with No.0 Fillpro® sand to approximately one foot above the screened interval. A six (6) inch bentonite clay seal was installed above the filtration sand. Any remaining boring annulus above the clay seal was filled with native soil to the ground surface. The temporary monitoring well construction logs are included with the soil boring logs and are attached as **Appendix A**.

Prior to the collection of the groundwater samples, a monitoring well survey was conducted to determine the top-of-casing elevations for the purpose of establishing the groundwater flow direction. An arbitrary reference point of one hundred (100.00) feet was used for the purpose of this survey. The groundwater gauging data collected on January 19, 2015 indicates the depth to groundwater ranges from 7.78 ft bgs (MW-3) to 9.24 ft bgs (MW-2) and suggests groundwater flows west-southwest from MW-2 to MW-1 and flows east-southeast from MW-3.

Well ID	Top of casing elevation	Depth to groundwater (ft bgs)	Groundwater Elevation
MW-1	101.275	8.89	92.385
MW-2	101.755	9.24	92.515
MW-3	101.185	7.78	93.405

5.5 Project Quality Assurance/Quality Control Practices

The CTDEEP's Quality Assurance and Quality Control (QA/QC) Guidance was used to ensure that the analytical results generated during the investigation are of known and appropriate quality. Specifically, the Laboratory Quality Assurance Control Reasonable Confidence Protocols (RCPs) were utilized for all laboratory analytical methods. The Laboratory Quality Assurance and Quality Control, Data Quality Assessment and Usability Evaluation (DQA/DUE) Guidance were utilized to ensure that the analytical data used is of known and sufficient level of quality for the intended purpose.

All samples collected in the field were stored in a manner that preserved the integrity of the sample chemistry. Samples intended for organic analyses were stored in an ice-filled cooler until delivery to the laboratory. Chain-of-Custody (COC) forms were filled out and accompanied all samples collected as a legal record of possession. The COC was initiated in the field and accompanied the containers during sample collection, transportation to the lab, analysis, and final disposal of the sample.

Quality assurance and quality control (QA/QC) samples were collected and analyzed to assess the quality of the samples collected in terms of the sampling techniques and procedures followed. One (1) field blank was collected during subsurface investigation activities and is designated as "Field Blank" on **Table 3**. In addition, three (3) trip blanks (two soil and one surface water) prepared and supplied by Phoenix Environmental Laboratories, Inc. were stored in the sample cooler along with the samples collected throughout the duration of the project and is designated as "Trip Blank" on **Tables 1** and **3**. The field blank was prepared by pouring laboratory supplied de-ionized water over decontaminated sampling equipment and collecting the resulting rinsate. The field blank was analyzed for PAHs and ETPH and the trip blank was analyzed for VOCs.

6.0 SUBSURFACE INVESTIGATION RESULTS

The following section provides a summary of the analytical results of the soil, sediment, surface water and groundwater sampling conducted at the site. In summary:

- Fourteen (14) soil samples were collected from fifteen (15) soil borings (SB-1 through SB-15)
- Three (3) sediment samples were collected adjacent to the Center Street Bridge (SED-1 through SED-3).
- Two (2) surface water samples were collected from Harbor Brook (SF-1 and SF-2).
- Three (3) groundwater samples were collected from three (3) temporary monitoring wells (MW-1 through MW-3).

Samples collected for this project were analyzed for ETPH, VOCs, PAHs, PCBs, total RCRA 8 Metals, SPLP RCRA 8 Metals (soil and sediment samples only), pesticides and herbicides. A copy of the laboratory reports is provided in **Appendix C**.

Although the project Site is not subject to the Transfer Act, the Voluntary Cleanup Program, nor the requirements of a Consent Order, the analytical results were compared to the Connecticut RSRs to evaluate the presence of contaminants within the investigated areas. This allows for management of contaminated media in a manner consistent with applicable regulations. The reported concentrations for soils and sediments were compared to the Res DEC and the GB PMC numeric criteria. The reported concentrations of surface water and groundwater samples were compared to the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to a Surface Water* and *General Permit for the Discharge of Groundwater Remediation Wastewater to a Sanitary Sewer* effluent discharge limitations.

6.1 Soil Sample Results

A summary of the soil sample analytical results is presented in **Table 1**. Copies of the laboratory analytical reports for the soil samples are included as **Appendix C**.

ETPH

ETPH was detected above the reporting limits in the soil samples collected from seven (7) of the soil boring locations (SB-6 (8-10'), SB-7 (8-10'), SB-8 (8-10'), SB-9 (6-8'), SB-10 (8-10'), SB-13 (4-6') and SB-14 (2-4')). ETPH concentrations in the soil samples ranged from 90 milligrams per kilogram (mg/kg) in soil sample SB-7 (8-10') to 2,000 mg/kg in soil sample SB-8 (8-10').

ETPH was reported at a concentration greater than applicable RSR numeric criteria in two (2) soil samples SB-8 (8-10') and SB-14 (2-4')).

VOCs

VOCs were detected above the reporting limits in the soil samples collected from six (6) of the soil boring locations (SB-1 (8-10'), SB-2 (8-10'), SB-3 (8-10'), SB-6 (8-10') and SB-15 (6-8')). Specifically, concentrations of one or more of following VOCs were detected: 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene and trichloroethene. VOC concentrations in the soil samples ranged from 5.5 micrograms per kilogram (μg/kg) of trichloroethene (TCE) in soil sample SB-4 (8-10') to 320 μg/kg of trichloroethene in soil sample SB-15 (6-8').

No concentrations of VOCs were reported greater than applicable RSR numeric criteria.

PAHs

PAHs were detected above the reporting limits in the soil samples collected from five (5) of the soil boring locations (SB-4 (8-10’), SB-7 (8-10’), SB-8 (8-10’), SB-13 (4-6’) and SB-14 (2-4’). Specifically, concentrations of one or more of following PAHs were detected: anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene. PAH concentrations in the soil samples ranged from 270 μg/kg of benzo(a)pyrene in soil sample SB-7 (8-10’) to 4,500 μg/kg of fluoranthene and pyrene in soil sample SB-14 (2-4’).

Several PAH compounds including benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene were reported at concentrations greater than applicable RSR numeric criteria in one (1) soil sample (SB-14 (2-4’)).

PCBs

PCBs were not detected above the reporting limits in the soil samples collected as part of this investigation.

Total RCRA 8 Metals

One or more of the total RCRA 8 metals were detected above the reporting limits in the soil samples collected from fourteen (14) of the soil boring locations (SB-1 through SB-4 and SB-6 through 15). Specifically, concentrations of one or more of following total RCRA 8 metals were detected: arsenic, barium, cadmium, chromium, lead and mercury. Total RCRA 8 metals concentrations in the soil samples ranged from 0.04 mg/kg of mercury in soil sample SB-11 (8-10’) to 224 mg/kg of lead in soil sample SB-13 (4-6’).

No concentrations of total RCRA 8 metals were reported greater than applicable RSR numeric criteria.

SPLP RCRA 8 Metals

One or more of the SPLP RCRA 8 metals were detected above the reporting limits in the soil samples collected from fourteen (14) of the soil boring locations (SB-1 through SB-4 and SB-6 through 15). Specifically, concentrations of one or more of following SPLP RCRA 8 metals were detected: arsenic, barium, chromium and lead. SPLP RCRA 8 metal concentrations in the soil samples ranged from 0.004 milligrams per liter (mg/l) of SPLP arsenic in soil sample SB-3 (8-10’) to 0.116 mg/l of SPLP lead in soil sample SB-14 (2-4’).

No concentrations of SPLP RCRA 8 metals were reported greater than applicable RSR numeric criteria.

Pesticides

One (1) pesticide constituent was detected above the reporting limit in one (1) soil sample (SB-8 (8-10)). Specifically, a concentration of 22μg/kg of 4,4'-DDT was reported.

No concentrations of pesticides were reported greater than applicable RSR numeric criteria.

Herbicides

Herbicides were not detected above the reporting limits in the soil samples collected as part of this investigation.

6.2 Sediment Sample Results

A summary of the sediment sample analytical results is presented in **Table 2**. Copies of the laboratory analytical reports for the sediment samples are included as **Appendix C**.

ETPH

ETPH was detected above the reporting limits in the one sediment samples (SED-1). ETPH concentrations in the sediment sample was reported at 110 mg/kg.

No concentrations of ETPH were reported greater than applicable RSR numeric criteria.

VOCs

VOCs were not detected above the reporting limits in the sediment samples collected as part of this investigation.

PAHs

PAHs were detected above the reporting limits in the sediment samples collected from three (3) of the sediment sample locations (SED-1, SED-2 and SED-3). Specifically, concentrations of one or more of following PAHs were detected: benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, fluorene and pyrene. PAH concentrations in the sediment samples ranged from 260 μg/kg of benzo(g,h,i)perylene in sediment sample SED-2 to 670 μg/kg of fluorene in sediment sample SED-3.

No concentrations of PAHs were reported greater than applicable RSR numeric criteria.

PCBs

PCBs were not detected above the reporting limits in the sediment samples collected as part of this investigation.

Total RCRA 8 Metals

Total RCRA 8 metals were detected above the reporting limits in sediment samples collected from three (3) of the locations (SED-1, SED-2 and SED-3).

Specifically, concentrations of one or more of following total RCRA 8 metals were detected: arsenic, barium, cadmium, chromium and lead. Total RCRA 8 metals concentrations in the sediment samples ranged from 1.3 mg/kg of arsenic in sediment sample SED-1 to 150 mg/kg of barium in sediment sample SED-2.

No total RCRA 8 metals concentrations were reported greater than applicable RSR numeric criteria.

SPLP RCRA 8 Metals

SPLP RCRA 8 metals were detected above the reporting limits in sediment samples collected from three (3) of the locations (SED-1, SED-2 and SED-3).

Specifically, concentrations of one or more of following SPLP RCRA 8 metals were detected: barium and lead. SPLP RCRA 8 metals concentrations in the sediment samples ranged from 0.012 mg/l of lead in sediment sample SED-2 to 0.032 mg/l of barium in sediment sample SED-2.

No SPLP RCRA 8 metals concentrations were reported greater than applicable RSR numeric criteria.

Pesticides

Pesticides were not detected above the reporting limits in the sediment samples collected as part of this investigation.

Herbicides

Herbicides were not detected above the reporting limits in the sediment samples collected as part of this investigation.

6.3 Surface Water Sample Results

A summary of the surface water sample analytical results is presented in **Table 3**. Copies of the laboratory analytical reports for the surface water samples are included as **Appendix C**.

ETPH

ETPH was not detected above the reporting limits in the surface water samples collected as part of this investigation.

VOCs

One (1) VOC compound was detected above the reporting limit in two (2) surface water samples (SF-1 and SF-2). Specifically, a concentration of 4.0 micrograms per liter (μg/l) and 6.3 μg/l, respectively, of tetrahydrofuran (THF) was reported

No concentrations of VOCs were reported greater than applicable RSR numeric criteria.

PAHs

PAHs were not detected above the reporting limits in the surface water samples collected as part of this investigation.

PCBs

PCBs were not detected above the reporting limits in the surface water samples collected as part of this investigation.

Total RCRA 8 Metals

One (1) RCRA 8 compound was detected above the reporting limit in two (2) surface water samples (SF-1 and SF-2). Specifically, a concentration of 0.116 mg/l and 0.122 mg/l, respectively, of Barium was reported.

Pesticides

Pesticides were not detected above the reporting limits in the surface water samples collected as part of this investigation.

Herbicides

Herbicides were not detected above the reporting limits in the surface water samples collected as part of this investigation.

6.4 Groundwater Sample Results

A summary of the groundwater sample analytical results is presented in **Table 4**. Copies of the laboratory analytical reports for the groundwater samples are included as **Appendix C**.

ETPH

ETPH was not detected above the reporting limits in the groundwater samples collected as part of this investigation.

VOCs

VOCs were detected above the reporting limits in the groundwater samples collected from three (3) groundwater samples (MW-1 through MW-3). Specifically, concentrations of one or more of following VOCs were detected: cis-1,2-dichloroethylene and trichloroethene (TCE). VOC concentrations in the groundwater samples ranged from 1.4 μg/l of cis-1,2-dichloroethylene in groundwater sample MW-2 to 210 μg/l of TCE in groundwater sample MW-2.

The VOCs detected are below the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* numeric criteria.

PAHs

PAHs were detected above the reporting limits in the groundwater samples collected from three (3) groundwater samples (MW-1 through MW-3). Specifically, concentrations of one or more of following PAHs were detected: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene.

PAH concentrations in the groundwater samples ranged from 0.02 μg/l of chrysene in groundwater sample MW-2 to 0.17 μg/l of fluoranthene in groundwater sample MW-3.

One (1) VOC compound (TCE) was reported in two samples (MW-1 and MW-2) at a concentration greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* numeric criteria.

PCBs

PCBs were not detected above the reporting limits in the groundwater samples collected as part of this investigation.

Total RCRA 8 Metals

Total RCRA 8 metals were detected above the limits in the groundwater samples collected from three (3) groundwater samples (MW-1 through MW-3). Specifically, concentrations of one or more of following total RCRA 8 metals were detected: arsenic, barium, chromium and lead. Total RCRA 8 concentrations in the soil samples ranged from 0.002 mg/l of chromium in groundwater sample MW-2 to 0.412 mg/l of barium in groundwater sample MW-1.

Two (2) total RCRA 8 metal concentrations (arsenic and/or lead) are greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* numeric criteria in two (2) groundwater samples (MW-1 and MW-3).

Pesticides

Pesticides were not detected above the reporting limits in the groundwater samples collected as part of this investigation.

Herbicides

Herbicides were not detected above the reporting limits in the groundwater samples collected as part of this investigation.

6.5 Quality Assurance/Quality Control Sample Results

A summary of the QA/QC results is presented in **Tables 1 through 4**. DQA/DUE worksheets are included as **Appendix B**. Copies of the laboratory analytical reports for the QA/QC samples are included as **Appendix C**.

As indicated in Section 5.5, one (1) field blank and three (3) trip blanks (two soil and one surface water) were submitted to the laboratory as part of this sampling program for quality assurance/quality control purposes. The field blank and the trip blanks did not exhibit detectable concentrations of any constituents, indicating that the field equipment used for the sampling had been adequately decontaminated and had no influence on the analytical results.

No duplicate samples were collected as part of this investigation.

7.0 SUMMARY AND CONCLUSIONS

Based upon the results of the laboratory analyses performed on soil, sediment, surface water and groundwater samples for this Task 210 investigation, two (2) areas of environmental concern (AOECs) for soil has been identified where contaminants are present at concentrations that exceed the applicable CTDEEP RSR criteria. Groundwater concentrations have identified the presence of VOCs and/or RCRA 8 metals in all groundwater monitoring wells greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* numeric criteria; therefore, the entire project Site has been designated a groundwater area of environmental concern (GW-AOEC).

Two (2) low-level areas of environmental concern (LLAOECs) for soil and one (1) LLAOEC for sediment have been identified where contaminants were detected at concentrations below applicable CTDEEP RSR standards, but above laboratory detection limits. Total and SPLP RCRA 8 metals were omitted in the LLAOEC determination as the concentrations are consistent with naturally-occurring background concentrations. The locations of the AOECs and LLAOECs are discussed in the following sections.

Based on the results of this report both soil and groundwater encountered during construction activities will require proper management and disposal in accordance with local and state requirements.

7.1 Soil – Area of Environmental Concern (AOEC)

<u>AOEC #1: SB-8 (8-10’)</u>

Analytical results from the soil sample collected from soil boring SB-8 (8-10’) identified the presence of ETPH at a concentration greater than the Res DEC. One (1) PAH and one (1) pesticide compound were also identified at a concentration below applicable RSR numeric criteria.

<u>AOEC #2: SB-14 (2-4’)</u>

Analytical results from the soil sample collected from soil boring SB-14 (2-4’) identified the presence of several PAHs and ETPH at concentrations greater than the Res DEC and/or the GB PMC.

7.1.1 Soil – Low Level Area of Environmental Concern (LL-AOEC)

LL-AOEC #A: SB-9 (6-8'), SB-10 (8-10')

Analytical results from the soil sample collected from soil boring SB-9 (6-8') and SB-10 (8-10') identified the presence of ETPH. Contaminate concentrations collected from this area are below applicable RSR numeric criteria.

LL-AOEC #B: SB-1 (8-10'), SB-2 (8-10'), SB-3 (8-10'), SB-4 (8-10'), SB-6 (8-10'), SB-7 (8-10'), SB-13 (4-6'), SB-15 (6-8')

Analytical results from soil samples SB-1 (8-10'), SB-2 (8-10'), SB-3 (8-10'), SB-4 (8-10'), SB-6 (8-10') and SB-15 (6-8') identified the presence of VOCs. PAHs were identified in soil borings SB-4 (8-10'), SB-7 (8-10') and SB-13 (4-6'). Additionally, ETPH was identified in soil borings SB-6 (8-10'), SB-7 (8-10') and SB-13 (4-6').

7.2 Sediment – Low Level Area of Environmental Concern (LL-AOEC)

LL-AOEC #C: SED-1 through SED-3

Analytical results from the sediment samples collected from the stream bed identified the presence of various PAHs and or ETPH. Contaminate concentrations collected from this area are below applicable RSR numeric criteria.

7.3 Groundwater – Area of Environmental Concern (GW-AOEC)

GW-AOEC #1: MW-1, MW-2, MW-3

Analytical results from the groundwater samples identified the presence of one (1) VOC (TCE) and two (2) RCRA 8 metals (arsenic and lead) in MW-1, one (1) VOC (TCE) in MW-2 and one (1) RCRA 8 metal (lead) at concentrations greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* effluent discharge limitations.

8.0 RECOMMENDATIONS

The results of the Task 210 – Subsurface Site Investigation Report for the replacement of the Center Street Bridge located in Meriden, Connecticut has identified the presence of PAHs and ETPH at concentrations greater than applicable RSR criteria in soils at depths ranging from zero to ten (0-10) ft bgs. In addition, groundwater has identified the presence VOCs and total RCRA 8 metals at concentrations greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* effluent discharge limitations.

Sediment samples identified the presence of low-level concentrations of PAHs and ETPH and surface water samples identified the presence of low-level VOCs and total RCRA 8 metals.

Based on the analytical data collected during the subsurface investigation associated with this report, two (2) areas of environmental concern (AOECs) for soil and one (1) groundwater area of environmental concern (GW-AOEC) have been identified. Additionally, two (2) LLAOECs for soil and one (1) LLAOEC for sediment have been identified. The surface water will not be considered a LLAOEC for the purpose of this report as the data collected as part of this investigation is intended to be utilized as baseline data for surface water conditions (pre-construction) in the event construction activities inadvertently result in contaminating to the surface water body.

Special considerations for treatment/disposal, dewatering activities, and worker health & safety must be given to these areas in order to ensure compliance with all local, State and Federal laws. Therefore, RED recommends Task 310 Plans and Specifications be prepared to further assess construction related activities (i.e. proper storage, classification, transport and disposal of contaminated materials), relative to environmental conditions prevalent within the project limits, as well as to specify remedial work to be included in the Contract Bid Documents.

9.0 REFERENCES

Applied Earth Technologies, April 2012, *Geotechnical Investigation,*

State of Connecticut Department of Environmental Protection, December 2010, *Laboratory Quality Assurance and Quality Control/Data Quality Assessment and Data Usability Evaluation Guidance Document*.

State of Connecticut Department of Environmental Protection, Rev. December 2010, *Laboratory Quality Assurance and Quality Control Guidance/Reasonable Confidence Protocols Guidance Document*.

Connecticut Department of Environmental Protection, June 2013, *Remediation Standard Regulations*.

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USGS **-** *Topographic Maps*. <http://topomaps.usgs.gov/>.

Stone, J., et al., 1992, *Surficial Materials Map of Connecticut*

10.0 DISCLAIMER AND LIMITATIONS

No other party, other than the Client, shall be entitled to rely on this Report of any information, documents, records, data, interpretations, advice or opinions given to the Client by RED TECHNOLOGIES, LLC (RED) in the performance of its work. The Report related solely to the specific project for which RED has been retained and shall not be used or replied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the express written permission of RED. Any unpermitted use by Client or any third party shall be at Client's or such third party's own risk and without any liability to RED.

RED has prepared this report in accordance with the contract scope of work, using reasonable efforts to attempt to identify areas of potential liability associated with AOECs at the Site. The conclusions in this report were based solely on RED's inspections and on readily available records, interviews, and other secondary sources. RED has made no independent investigation of the accuracy of these secondary sources and has assumed them to be accurate and complete. RED does not warrant the accuracy or completeness of information provided by secondary sources. RED does not warrant that all contamination that may exist on the Site has been discovered, that the Site is suitable for any particular purpose or that the Site is clean or free of liability. This report is only meant to fulfill the stated purpose of this specific report. Over time, various aspects of the subject property may change and would require further investigation and subsequent modification of this report's findings. The ownership of information in this report is reserved entirely to RED and Client. RED should be notified by any party wishing to use any or all parts of this report.

RED has used reasonable care, skill, competence and judgment in the performance of its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by RED should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

Except as expressly provided in this disclaimer and limited warranty section, RED makes no other representation or warranty of any kind whatsoever, oral, or written, expressed or implied; and all implied warranties or merchantability and fitness for a particular purpose, are hereby disclaimed.

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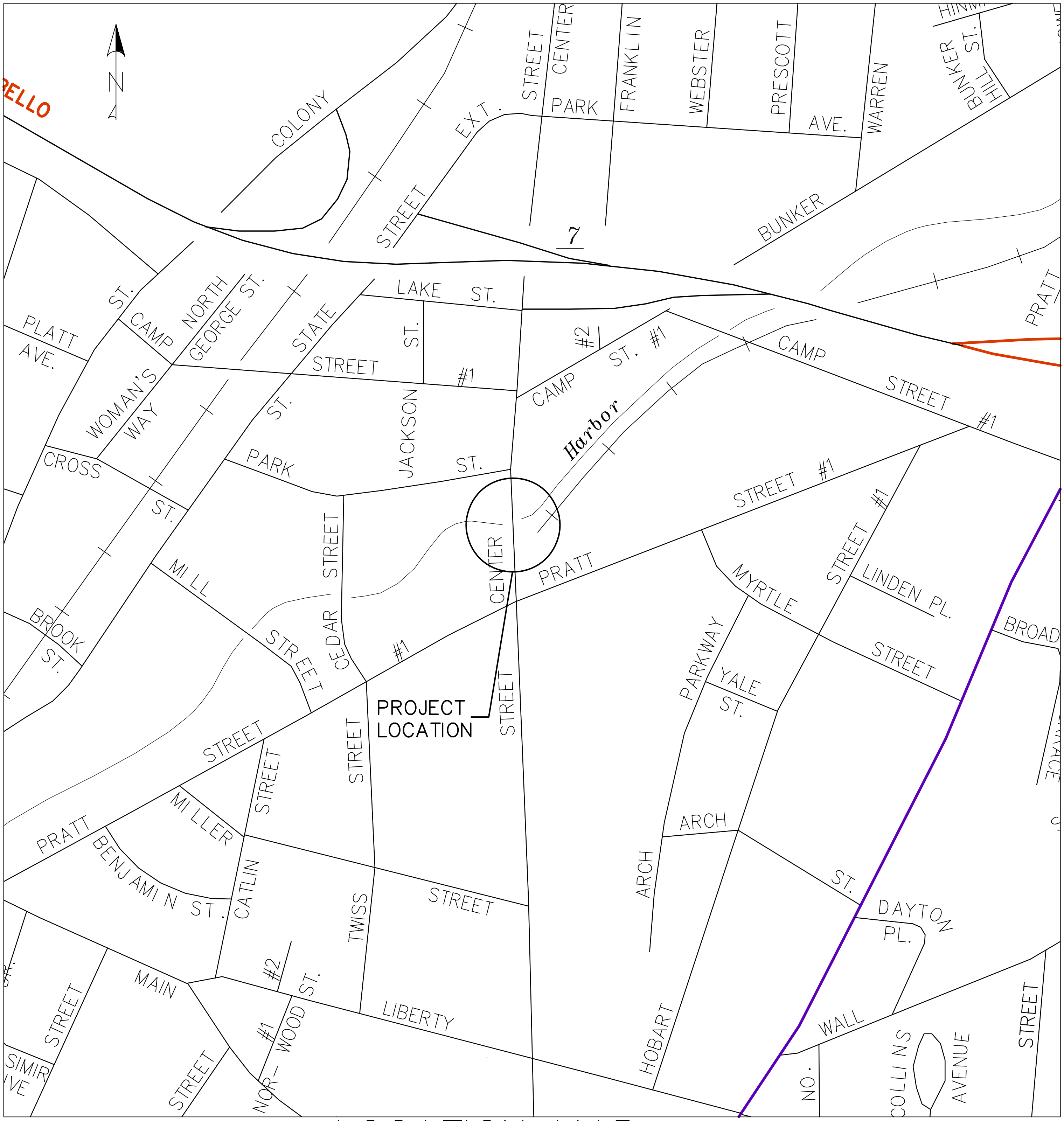
This report is intended to be utilized solely by the client unless otherwise indicated. It may be relied on only by the client unless otherwise indicated and warranties set forth in this report only extend to the client or other designated party.

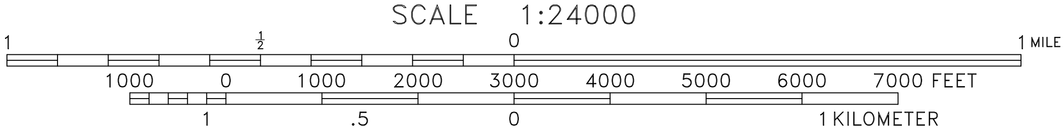
FIGURES



LOCATION MAP

N.T.S.

CENTER STREET BRIDGE	MERIDEN, CT
SCALE 1:24000	PROJECT LOCATION PLAN



CENTER STREET BRIDGE REPLACEMENT
BRIDGE # 04185
ROADWAY PLAN

SCALE IN FEET
40' 20' 0 40'
SCALE: 1" = 20'

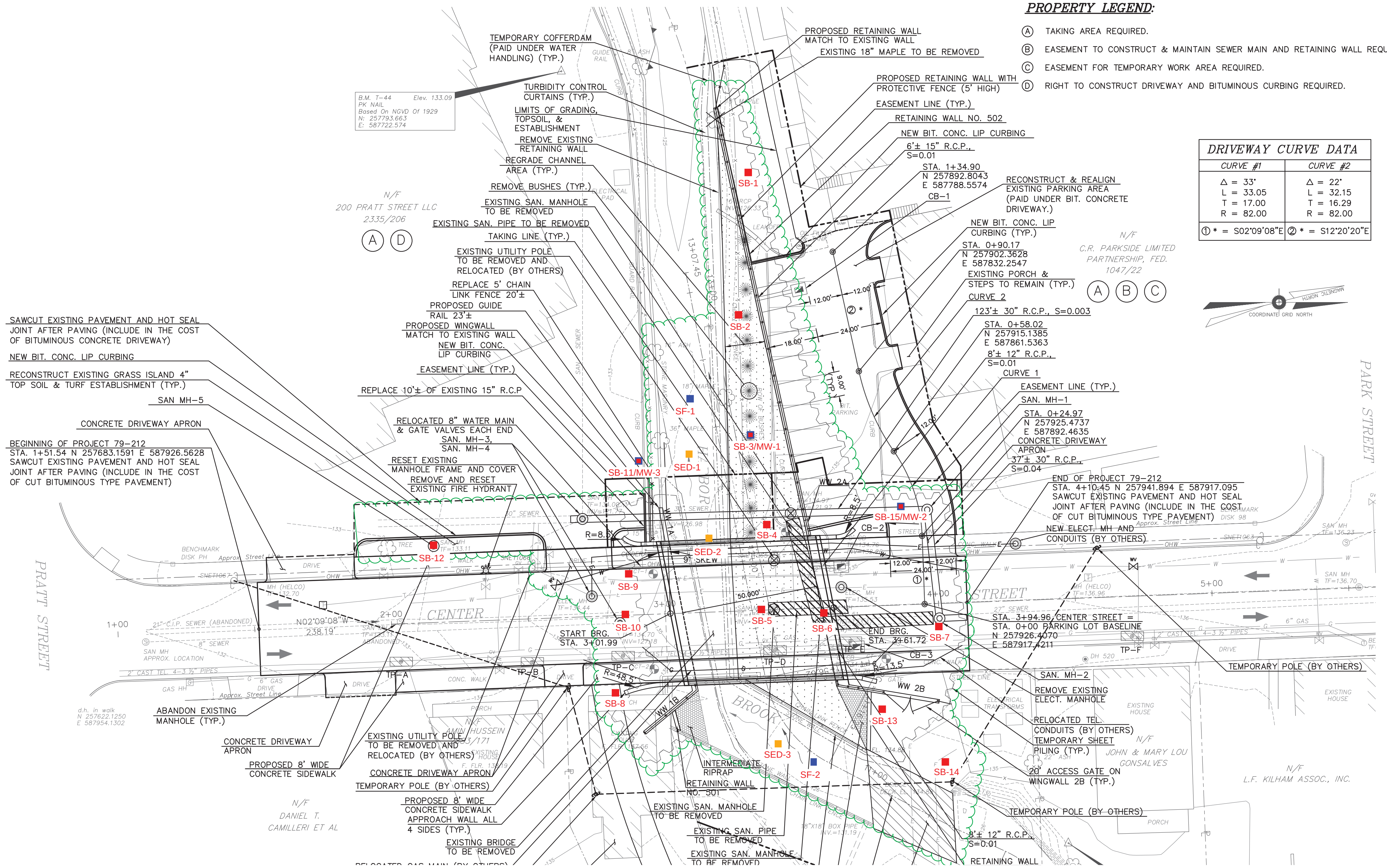
Legend
- Soil Boring/ Temporary Groundwater Monitoring Well
- Soil Boring
- Sediment sample
- Surface Water Sample
- Limit of Excavation

PROPERTY LEGEND:

- (A) TAKING AREA REQUIRED.
- (B) EASEMENT TO CONSTRUCT & MAINTAIN SEWER MAIN AND RETAINING WALL REQUIRED.
- (C) EASEMENT FOR TEMPORARY WORK AREA REQUIRED.
- (D) RIGHT TO CONSTRUCT DRIVEWAY AND BITUMINOUS CURBING REQUIRED.

DRIVEWAY CURVE DATA

CURVE #1	CURVE #2
Δ = 33°	Δ = 22°
L = 33.05	L = 32.15
T = 17.00	T = 16.29
R = 82.00	R = 82.00
① * = S02°09'08"E	② * = S12°20'20"E



RED TECHNOLOGIES, LLC
REMEDIATION, ENGINEERING & DEVELOPMENT
10 Northwood Drive, Bloomfield, CT 06002
(860) 218-2428 | www.redtechllc.com

DATE: 1-26-2015
SCALE: AS SHOWN
DRAWN BY: TWM
CHECKED BY: LM
TITLE: Environmental Sampling Location Map
FIGURE NO: 2
ADDRESS: Center Street Bridge Over Harbor Brook Meriden, Connecticut

NO.	DATE	DESCRIPTION	SHEET NO.
		REVISIONS	

SUPERVISOR: J.A.C.
DESIGNER: T.I., E.I.N.
DRAFTER: E.I.N., C.A.
CHECKED BY: T.I., J.A.C.
DATE CHECKED: 09/19/14

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
ENGINEER: WENGELL, McDONNELL & COSTELLO CONSULTING ENGINEERS
APPROVED BY: DATE:

OFFICE OF ENGINEERING

PROJECT TITLE: REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK
CADD FILE: \PROJECTS\00056\CENTER\DRAWINGS\PLAN&PROFILE\CENTER PLAN

TOWN: CITY OF MERIDEN, CT
DRAWING TITLE: CENTER STREET ROADWAY PLAN

PROJECT NO.: 79-212
BRIDGE NO.: 04185
DRAWING NO.: – OF –
SHEET NO.: 3 OF 25

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
Center Street Bridge over Harbor Brook
Meriden, Connecticut

Sample Location			SB-1	SB-2	SB-3/MW-1	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9	SB-10	SB-11/MW-3	SB-12	SB-13	SB-14	SB-15/MW-2	Trip Blank	Trip Blank
Sample Depth (ft):			8-10	8-10	8-10	8-10	N/A	8-10	8-10	8-10	6-8	8-10	8-10	6-8	4-6	2-4	6-8	NA	NA
Sample Date:			1/16/2015	1/16/2015	1/16/2015	1/16/2015	N/A	1/7/2015	1/7/2015	1/7/2015	1/7/2015	1/7/2015	1/16/2015	1/16/2015	1/7/2015	1/7/2015	1/16/2015	1-7-2015	1-16-2015
VOCs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**																	
1,2,4-Trimethylbenzene	NE	NE	< 5.7	< 6.1	< 6.7	< 5.2	NC	52.0	< 5.1	< 290	< 5.8	< 5.4	< 5.2	< 4.7	< 4.9	< 6.1	< 5.7	ND	ND
1,3,5-Trimethylbenzene	NE	NE	< 5.7	< 6.1	< 6.7	< 5.2	NC	18.0	< 5.1	< 290	< 5.8	< 5.4	< 5.2	< 4.7	< 4.9	< 6.1	< 5.7	ND	ND
Naphthalene	NE	NE	< 5.7	< 6.1	< 6.7	< 5.2	NC	44.0	< 5.1	< 290	< 5.8	< 5.4	< 5.2	< 4.7	< 4.9	< 6.1	< 5.7	ND	ND
Trichloroethene (TCE)	56,000	1,000	19	14	41	5.5	NC	< 5.5	< 5.1	< 7.6	< 5.8	< 5.4	< 5.2	< 4.7	< 4.9	< 6.1	320	ND	ND
PAHs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**																	
Anthracene	1,000,000	400,000	< 260	< 260	< 290	< 270	NC	< 250	< 260	< 260	< 550	< 260	< 260	< 260	< 270	990	< 280	NA	NA
Benz(a)anthracene	1,000	1,000	< 260	< 260	< 290	560	NC	< 250	420	< 260	< 550	< 260	< 260	< 260	320	**2,400**	< 280	NA	NA
Benzo(a)pyrene	1,000	1,000	< 260	< 260	< 290	560	NC	< 250	270	< 260	< 550	< 260	< 260	< 260	280	**2,400**	< 280	NA	NA
Benzo(b)fluoranthene	1,000	1,000	< 260	< 260	< 290	860	NC	< 250	410	< 260	< 550	< 260	< 260	< 260	370	**3,500**	< 280	NA	NA
Benzo(ghi)perylene	NE	NE	< 260	< 260	< 290	280	NC	< 250	< 260	< 260	< 550	< 260	< 260	< 260	< 270	910	< 280	NA	NA
Benzo(k)fluoranthene	8,400	1,000	< 260	< 260	< 290	< 270	NC	< 250	< 260	< 260	< 550	< 260	< 260	< 260	< 270	950	< 280	NA	NA
Chrysene	NE	NE	< 260	< 260	< 290	610	NC	< 250	370	450	< 550	< 260	< 260	< 260	300	2,700	< 280	NA	NA
Fluoranthene	1,000,000	56,000	< 260	< 260	< 290	1,100	NC	< 250	730	< 260	< 550	< 260	< 260	< 260	650	4,500	< 280	NA	NA
Indeno(1,2,3-cd)pyrene	NE	NE	< 260	< 260	< 290	< 270	NC	< 250	< 260	< 260	< 550	< 260	< 260	< 260	< 270	890	< 280	NA	NA
Phenanthrene	1,000,000	40,000	< 260	< 260	< 290	590	NC	< 250	560	< 260	< 550	< 260	< 260	< 260	460	4,100	< 280	ND	ND
Pyrene	1,000,000	40,000	< 260	< 260	< 290	1,000	NC	< 250	520	< 260	< 550	< 260	< 260	< 260	520	4,500	< 280	ND	ND
Pesticides	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**																	
4,4'-DDT	NE	NE	< 7.5	< 7.6	< 8.2	< 7.6	NC	< 7.1	< 7.4	22.0	< 7.8	< 7.6	< 7.5	< 7.5	< 7.7	< 7.6	< 7.8	NA	NA
Herbicides	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**																	
Herbicides	-	-	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Total Metals	**Res DEC (mg/Kg)**	**GB PMC (mg/L)**																	
Arsenic	10	NE	7.1	4.2	5.5	3.1	NC	1.5	2.7	1.8	4.3	1.9	3	2.7	2.3	5.8	6	NA	NA
Barium	4,700	NE	143	95.6	104	93.3	NC	85	97.8	71.2	89.4	77.7	54	69.1	175	72.9	146	NA	NA
Cadmium	34	NE	< 0.40	< 0.38	< 0.43	< 0.35	NC	< 0.38	< 0.41	< 0.39	< 0.39	< 0.35	< 0.37	< 0.36	1.22	0.70	< 0.42	NA	NA
Chromium	NE	NE	26.9	23.2	26.2	22.3	NC	15.6	25.9	24.2	27.1	19.2	30.2	17.5	18.3	13.5	21.4	NA	NA
Lead	400	NE	9.09	10.7	24.4	15.5	NC	6.82	25.8	13.2	9.28	10.3	10.9	20.9	224	222	9.55	NA	NA
Mercury	20	NE	0.1	< 0.03	0.23	< 0.03	NC	< 0.06	< 0.07	< 0.09	< 0.08	< 0.09	0.04	0.18	0.14	0.68	< 0.03	NA	NA
SPLP Metals	**Res DEC (mg/Kg)**	**GB PMC (mg/L)**																	
SPLP Arsenic	NE	0.5	< 0.004	< 0.004	0.004	0.01	NC	0.005	< 0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	< 0.004	< 0.004	< 0.004	NA	NA
SPLP Barium	NE	10	0.037	0.047	0.087	0.115	NC	0.085	0.051	0.053	0.043	0.023	0.021	0.018	0.036	0.046	0.056	NA	NA
SPLP Chromium	NE	0.5	< 0.010	< 0.010	0.019	0.018	NC	0.016	< 0.010	0.011	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	NA	NA
SPLP Lead	NE	0.15	0.012	< 0.010	0.032	0.05	NC	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.012	0.116	< 0.010	NA	NA
ETPH	**Res DEC (mg/kg)**	**GB PMC (mg/kg)**																	
ETPH	500	2,500	< 57	< 57	< 61	< 57	NC	220	90	**2,000**	340	200	< 56	< 56	94	**1,400**	< 58	NA	NA
PCBs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**																	
PCBs	-	-	ND	ND	ND	ND	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

Notes:

Res DEC - Residential Direct Exposure Criteria
GB PMC - GB Pollutant Mobility Criteria
SPLP - Synthetic Precipitate Leaching Procedure
ETPH - Extractable Total Petroleum Hydrcarbons
VOCs - Volatile Organic Compounds
PAHs - Polyaromatic Hydrocarbons
PCBs - Polychlorinated biphenyls
ND - not detected

2,000 - Exceedance of one or more RSR criteria
mg/Kg - milligram per kilogram
mg/L - milligram per liter
µg/Kg - microgram per kilogram
NE - not established
NA - not analyzed
N/A - not applicable
NC - not collected

TABLE 2
SUMMARY OF SEDIMENT ANALYTICAL DATA
Center Street Bridge over Harbor Brook
Meriden, Connecticut

Sample Location			SED-1	SED-2	SED-3	Field Blank	Trip Blank
Sample Depth (ft):			-	-	-	-	-
Sample Date:			1-9-2015	1-9-2015	1-9-2015	NA	NA
VOCs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**					
VOCs	-	-	ND	ND	ND	NA	NA
PAHs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**					
Benzo(a)pyrene	1,000	1,000	< 260	< 250	430	NA	NA
Benzo(b)fluoranthene	1,000	1,000	< 260	< 250	420	NA	NA
Benzo(ghi)perylene	NE	NE	< 260	260	550	NA	NA
Dibenz(a,h)anthracene	NE	NE	< 260	< 250	440	NA	NA
Fluorene	1,000,000	56,000	270	340	670	NA	NA
Pyrene	1,000,000	40,000	< 260	< 250	360	NA	NA
Pesticides	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**					
Pesticides	-	-	ND	ND	ND	NA	NA
Herbicides	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**					
Herbicides	-	-	ND	ND	ND	NA	NA
Total Metals	**Res DEC (mg/Kg)**	**GB PMC (mg/L)**					
Arsenic	10	NE	1.3	3.5	3.8	NA	NA
Barium	4,700	NE	143	150	113	NA	NA
Cadmium	34	NE	< 0.37	< 0.37	1.39	NA	NA
Chromium	NE	NE	20.3	15.7	13.2	NA	NA
Lead	400	NE	14.8	36.3	77.7	NA	NA
SPLP Metals	**Res DEC (mg/Kg)**	**GB PMC (mg/L)**					
SPLP Barium	NE	10	0.023	0.032	0.029	NA	NA
SPLP Lead	NE	0.15	< 0.010	0.012	0.016	NA	NA
ETPH	**Res DEC (mg/kg)**	**GB PMC (mg/kg)**					
ETPH	500	2,500	110	< 53	< 52	NA	NA
PCBs	**Res DEC (µg/kg)**	**GB PMC (µg/kg)**					
PCBs	-	-	ND	ND	ND	NA	NA

Notes:

Res DEC - Residential Direct Exposure Criteria
GB PMC - GB Pollutant Mobility Criteria
SPLP - Synthetic Precipitate Leaching Procedure
ETPH - Extractable Total Petroleum Hydrcarbons
VOCs - Volatile Organic Compounds
PAHs - Polyaromatic Hydrocarbons
PCBs - Polychlorinated biphenyls
ND - not detected

270 - Exceedance of one or more RSR criteria
mg/Kg - milligram per kilogram
mg/L - milligram per liter
µg/Kg - microgram per kilogram
NE - not established
NA - not analyzed
N/A - not applicable

TABLE 3
SUMMARY OF SURFACE WATER ANALYTICAL DATA
Center Street Bridge over Harbor Brook
Meriden, Connecticut

Sample Location			SF-1	SF-2	Field Blank	Trip Blank
Sample Depth (ft):			-	-	-	-
Sample Date:			1-9-2014	1-9-2015	1-9-2015	1-9-2015
VOCs	**SWPC (µg/L)**	**Res Vol (ug/L)**				
Tetrahydrofuran (THF)	NE	NE	4.0	6.3	NA	ND
PAHs	**SWPC (µg/L)**	**Res Vol (ug/L)**				
PAHs	-	-	ND	ND	ND	NA
Pesticides	**SWPC (µg/L)**	**Res Vol (ug/L)**				
Pesticides	-	-	ND	ND	NA	NA
Herbicides	**SWPC (µg/L)**	**Res Vol (ug/L)**				
Herbicides	-	-	ND	ND	NA	NA
Total Metals	**SWPC (mg/L)**	**Res Vol (mg/L)**				
Barium	NE	NE	0.116	0.122	NA	NA
ETPH	**SWPC (mg/L)**	**Res Vol (mg/L)**				
ETPH	NE	NE	ND	ND	ND	NA
PCBs	**SWPC (µg/L)**	**Res Vol (ug/L)**				
PCBs	0.5	NE	ND	ND	NA	NA

Notes:

SWPC - Surface Water Protection Criteria

270 - Exceedance of one or more RSR criteria

Res Vol - Residential Groundwater Volitalization Criteria

NE - regulatory criteria not established

NA - not analyzed

ND - not detected

VOCs - Volatile Organic Compounds

PAHs - Polyaromatic Hydrocarbons

PCBs - Polychlorinated biphenyls

ETPH - Extractable Total Petroleum Hydrcarbons

µg/L - micrograms/Liter

mg/L - milligrams/Liter

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL DATA
Center Street Bridge over Harbor Brook
Meriden, Connecticut

Sample Location			MW-1	MW-2	MW-3	Field Blank	Trip Blank
Sample Depth (ft):			-	_	-	-	-
Sample Date:			1-19-2015	1-19-2015	1-19-2015	NA	NA
VOCs	**Surface Water Discharge Effluent Limits**	**Sanitary Sewer Discharge Effluent Limits**					
cis-1,2-Dichloroethene	NE	NE	1.4	1.4	< 1.0	NA	NA
Trichloroethene (TCE)	NE	NE	96	210	24	NA	NA
Total VOCs	50 (µg/l)	5,000 (µg/l)	**97**	**211**	24	NA	NA
PAHs							
Benz(a)anthracene	0.49	NE	0.07	0.03	0.05	NA	NA
Benzo(a)pyrene	0.49	NE	0.05	< 0.02	0.03	NA	NA
Benzo(b)fluoranthene	NE	NE	0.07	< 0.02	0.05	NA	NA
Benzo(k)fluoranthene	0.49	NE	0.04	< 0.02	0.02	NA	NA
Chrysene	NE	NE	0.07	0.02	0.04	NA	NA
Fluoranthene	NE	NE	0.16	< 0.10	0.17	NA	NA
Fluorene	NE	NE	< 0.10	< 0.10	0.1	NA	NA
Indeno(1,2,3-cd)pyrene	0.49	NE	0.03	< 0.02	< 0.02	NA	NA
Phenanthrene	NE	NE	0.09	< 0.07	0.31	NA	NA
Pyrene	NE	NE	0.14	< 0.10	0.16	NA	NA
Total PAHs	5 (µg/l)	500 (µg/l)	0.72	0.05	0.93	NA	NA
Pesticides							
Total Pesticides	Compound Specific	Compound Specific	ND	ND	ND	NA	NA
Herbicides							
Herbicides	Compound Specific	Compound Specific	ND	ND	ND	NA	NA
Total Metals							
Arsenic	0.000021 (mg/l)	0.1 (mg/l)	**0.006**	< 0.004	< 0.004	NA	NA
Barium	NE	5 (mg/l)	0.412	0.167	0.174	NA	NA
Chromium	0.342 (mg/l)	1 (mg/l)	0.033	0.002	0.006	NA	NA
Lead	.0098 (mg/l)	0.1 (mg/l)	**0.237**	0.003	**0.013**	NA	NA
ETPH							
ETPH	5 (mg/l)	100 (mg/l)	ND	ND	ND	NA	NA
PCBs							
PCBs	0.1 (µg/l)	1 (µg/l)	ND	ND	ND	NA	NA

Notes:

SWPC - Surface Water Protection Criteria
Res Vol - Residential Groundwater Volitalization Criteria
NE - regulatory criteria not established
NA - not analyzed
ND - not detected
VOCs - Volatile Organic Compounds
PAHs - Polyaromatic Hydrocarbons
PCBs - Polychlorinated biphenyls
ETPH - Extractable Total Petroleum Hydrcarbons
µg/L - micrograms/Liter
mg/L - milligrams/Liter

270 - Exceedance of one or more RSR criteria

APPENDIX A
Soil Boring Logs

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-1***
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~8' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/16/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
1, 2	48"	20"	<1		0 - 2' - Brown, SILT, trace fine angular gravel, trace fine sand, Dry	-	(WELL NOT INSTALLED)
3, 4			<1		2' - 4' - Brown, SILT, trace fine semi-angular gravel, trace fine sand, Dry	-	
5, 6	48"	30"	<1		4' - 6' - Reddish-Brown, SILT, some fine sand, trace medium semi-rounded gravel, trace organic material, Dry	-	
7, 8			<1		6' - 8' - Reddish-Brown, SILT, some fine sand, trace medium semi-rounded gravel, Dry	-	
9, 10	48"	31"	<1		8' - 10' - Brown, SILT, some fine angular gravel, trace medium sand, trace medium semi-angular gravel, Wet	8' - 10' @ 0930	
11, 12					10' - 12' - Brown, SILT, some fine angular gravel, little coarse sand, trace medium angular gravel, Wet	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	*SB-2*
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~9' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/16/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
1, 2	48"	20"	<1		0 - 2' - Brown, SILT, some medium to fine sand, little medium semi-angular gravel, trace coarse sand, Dry	-	(WELL NOT INSTALLED)
3, 4			<1		2' - 4' - Brown, SILT, trace fine sand, ash material @ 4fbg, Dry	-	
5, 6	48"	30"	<1		4' - 6' - Dark Brown, FINE SANDY SILT, little fine semi-angular gravel, trace medium sand, trace ash material, Dry	-	
7, 8			<1		6' - 8' - Dark Brown, FINE SANDY SILT, little fine semi-angular gravel, trace medium sand, Moist	-	
9, 10	48"	31"	<1		8' - 10' - Brown, SILT, some medium to fine semi-angular gravel, little medium sand, Wet	8' - 10' @ 0915	
11, 12					10' - 12' - Brown, SILT, some fine angular gravel, little medium to fine sand, Saturated	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

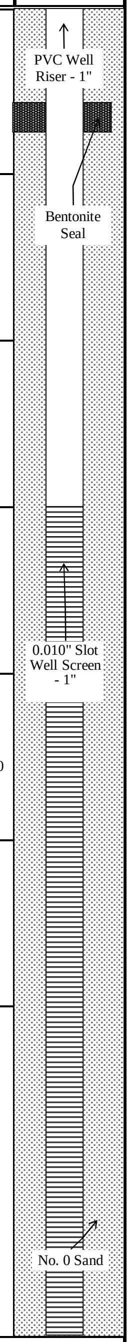
RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	*SB-3/MW-1*
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	16'
Project Number:	14-385	Approximate Groundwater Depth:	~9' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	16'
Location:	Meriden, CT	Slot Size:	0.010
Date Start/Completion:	1/16/2017	Sand:	No. 0
Drilling Contractor:	Metric Earth Services	Screen Length:	10'
Drilling Method:	Geoprobe®	Top of Casing Elevation	101.275

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)
0 - 2	48"	30"	<1		0 - 2' - Brown, SILT, little fine sand, trace organics, trace fine rounded gravel, Dry	-
2 - 4					2' - 4' - Brown, SILT, some fine sand, little fine semi-rounded gravel, trace brick fragments, Dry	-
4 - 6	48"	29"	<1		4' - 6' - Brown, SILT, little medium sand, trace fine angular gravel, trace brick fragments, Dry	-
6 - 8					6' - 8' - Brown, SILT, little medium sand, trace fine gravel, brick fragments, Wet	-
8 - 10	48"	31"	<1		8' - 10' - Brown, SILT and COARSE SAND, trace fine angular gravel, trace fine sand, Wet	8' - 10' @ 0840
10 - 12					10' - 12' - Brown, SILT and COARSE SAND, trace fine angular gravel, Saturated	-
12 - 16	48"	25"	<1		12' - 16' - Brown, SILT and COARSE SAND, trace fine angular gravel, Saturated	-

TEMPORARY WELL DIAGRAM



End of Boring @ 16 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-4***
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		**BORING/WELL INFORMATION**	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~8' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/16/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
1, 2	48"	20"	<1		0 - 2' - Brown, SILT, little fine sand, Dry	-	(WELL NOT INSTALLED)
3, 4			<1		2' - 4' - Brown, SILT, some fine sand, little fine, trace medium angular gravel, Dry	-	
5, 6	48"	30"	<1		4' - 6' - Brown, SILT, some fine sand, Dry	-	
7, 8			<1		6' - 8' - Reddish Brown, SILT, some fine sand, trace medium size brick fragments, trace organics (roots), Moist	-	
9, 10	48"	31"	<1		8' - 10' - Brown, SILT, some fine sand, little medium angular gravel, Wet	8' - 10' @ 0810	
11, 12					10' - 12' - Brown, MEDIUM SAND, some silt, trace medium to fine semi-rounded gravel, trace brick fragments, Wet	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

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REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-5***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		**BORING/WELL INFORMATION**	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	6"
Project Number:	14-385	Approximate Groundwater Depth:	UNKN
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Branford, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0–4	48"	6"			0 - 4" Asphalt	-	(WELL NOT INSTALLED)
					4" - 6" - CONCRETE - Offset boring three times, concrete still encountered-Refusal @ 6"	-	
4–8							
8–12							

End of Boring @ 6 inches bgs

Soil Description: **and = 35-50%** **some = 20-35%** **little = 10-20%** **trace = 1-10%**

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-6***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~8' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	
Location:	Meriden, CT	Slot Size:	
Date Start/Completion:	1/7/2015	Sand:	
Drilling Contractor:	Metric Earth Services	Screen Length:	
Drilling Method:	Geoprobe®	Top of Casing Elevation	

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0–2	48"	32"	<1		11" ASPHALT 11"- 2' - Brown, FINE SAND, some medium sand, little fine angular gravel, trace silt, Dry	-	(WELL NOT INSTALLED)
2–4			<1		2' - 4' - Brown, FINE SAND, some medium to fine angular gravel, little medium sand, trace silt, Dry	-	
4–6	48"	26"	<1		4' - 6' - Brown, FINE SAND, some fine to medium anuglar gravel, little medium sand, trace silt, Dry	-	
6–8					6' - 8' - Brown, FINE SAND, some medium sand, little silt, trace fine semi-angular gravel, Dry	-	
8–10	48"	34"	<1		8' - 10' - Brown, FINE SAND, little silt, trace fine semi-angular gravel, Moist	8' - 10' @ 1105	
10–12					10' - 12' - Brown, COARSE SAND, some medium to fine sand, little silt, trace fine angular gravel, Wet	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-7***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	-
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0 - 2	48"	31"	<1		0 - 2' - Light Brown, FINE SAND, little silt, little medium to fine angular gravel, trace medium sand, Dry	-	(WELL NOT INSTALLED)
2 - 4					2' - 4' - Light Brown, FINE SAND, some silt, little medium to fine angular gravel, Dry	-	
4 - 6	48"	27"	<1		4' - 6' - Light Brown, FINE SAND, little fine angular gravel, little silt, trace medium sand, Dry	-	
6 - 8					6' - 8' - Light Brown, FINE SAND, little silt, little fine angular gravel, trace medium sand, Dry	-	
8 - 10	48"	31"	<1		8' - 10' - Light Brown, FINE SAND, some slilt, trace, fine gravel, trace medium sand, Moist	8' - 10' @ 0940	
10 - 12					10' - 12' - Brown, MEDIUM SAND, little fine gravel, trace silt, Wet	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-8***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~8' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Hand Auger	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0 - 2	48"	30"	<1		0 - 2' - Brown, SILT, some medium to fine sand, little medium angular gravel, trace coarse sand, Dry	-	(WELL NOT INSTALLED)
2 - 4					2' - 4' - Brown, SILT, little medium to fine sand, little angular fine gravel, trace coarse to medium sand, Dry	-	
4 - 6	48"	29"	<1		4' - 6' - Brown, SILT, some medium to fine sand, little medium to fine angular gravel, trace coarse sand, Dry	-	
6 - 8					6' - 8' - Brown, SILT, some fine sand, little medium to fine semi-angular gravel, little medium sand, Moist	-	
8 - 10	48"	34"	<1		8' - 10' - Brown, MEDIUM TO FINE SAND, some fine rounded gravel, little silt, trace coarse sand, Wet	8' - 10' @ 1340	
10 - 12					10' - 12' - Brown, MEDIUM SAND, some fine semi-rounded gravel, little coarse to medium sand, trace silt, Saturated	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-9***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~9 bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
1–2	48"	28"	<1		0 - 2' - Brown, SILT, little medium to fine sand, trace medium rounded gravel, trace coarse sand, Dry	-	(WELL NOT INSTALLED)
3–4					2' - 4' - Brown, SILT, some fine sand, trace fine angular gravel, trace coarse sand, Dry	-	
5–6	48"	40"	<1		4' - 6' - Brown, SILT, some fine sand, trace fine angular gravel, trace coarse sand, Dry	-	
7–8			<1		6' - 8' - Brown, SILT, little fine sand, trace fine gravel, trace medium sand, Moist	6' - 8' @ 1435	
9–10	48"	34"	<1		8' - 10' - Brown, SILT, some fine sand, trace fine semi-angular gravel, Wet	-	
11–12					10' - 12' - Brown, SILT, some fine sand, trace fine semi-angular gravel, trace medium sand, Saturated	-	

End of Boring @ 12 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-10***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	12'
Project Number:	14-385	Approximate Groundwater Depth:	~9' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0 - 1	48"	20"	<1		0 - 1' - ASPHALT	-	(WELL NOT INSTALLED)
1 - 2			<1		1' - 2' - Brown, SILT, little fine sand, little fine angular gravel, Dry	-	
2 - 4					2' - 4' - Brown, SILT, some fine sand, trace fine angular gravel, trace medium sand, Dry	-	
4 - 6	48"	30"	<1		4' - 6' - Brown, SILT, some fine sand, little medium to fine angular gravel, trace medium sand, Dry	-	
6 - 8			<1		6' - 8' - Brown, SILT, some fine sand, little medium to fine angular gravel, trace medium sand, moist	-	
8 - 10	48"	33"	25.9		8' - 10' - Brown, SILT, some medium sand, little fine semi-angular gravel, little fine sand, Wet	8' - 10' @ 1245	
10 - 12			15.9		10' - 12' - Brown, SILT and MEDIUM SAND, trace fine gravel, Saturated	-	

End of Boring @ 12 ft bgs

Soil Description: **and = 35-50%** **some = 20-35%** **little = 10-20%** **trace = 1-10%**

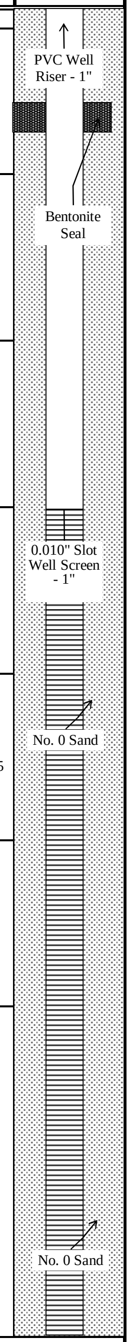
RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-11/MW-3***
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		**BORING/WELL INFORMATION**	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	16'
Project Number:	14-385	Approximate Groundwater Depth:	~9' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	16'
Location:	Meriden, CT	Slot Size:	0.010
Date Start/Completion:	1/16/2015	Sand:	No. 0
Drilling Contractor:	Metric Earth Services	Screen Length:	10'
Drilling Method:	Geoprobe®	Top of Casing Elevation	101.185

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)
0 - 4"	48"	20"			0 - 4" Asphalt	-
1			<1		4" - 2' - Brown, SILT, some fine sand, little fine very angular gravel, trace medium sand, Dry	-
2 - 4			<1		2' - 4' - Brown, SILT, little fine sand, trace fine very angular gravel, Dry	-
4 - 6	48"	30"	<1		4' - 6' - Brown, SILT, little fine sand, Dry	-
6 - 8			<1		6' - 8' - Brown, SILT, little fine sand, trace fine rounded gravel, Moist	-
8 - 10	48"	31"	<1		8' - 10' - Brown, MEDIUM SANDY SILT, little fine angular gravel, Wet	8' - 10' @ 1155
10 - 12					10' - 12' - Brown, MEDIUM SANDY SILT, trace fine semi-angular gravel, Saturated	-
12 - 16	48"	25"	<1		12' - 16' - Brown, MEDIUM SAND, little silt, trace fine semi-angular gravel, Saturated	-

TEMPORARY WELL DIAGRAM



End of Boring @ 16 ft bgs

Soil Description: **and = 35-50%** **some = 20-35%** **little = 10-20%** **trace = 1-10%**

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-12***
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	8'
Project Number:	14-385	Approximate Groundwater Depth:	UKN
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/16/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0-2	48"	30"	<1		0 - 4" Brown, SILT, some fine sand, trace medium semi-rounded gravel, trace coarse sand, Dry	-	(WELL NOT INSTALLED)
2-4						-	
4-6	48"	42"	<1		4' - 6' - Brown, SILT, some fine sand, little fine rounded gravel, trace coarse sand, Dry	-	
6-8					6' - 8' - Brown, FINE SAND, some silt, little fine angular gravel, Dry	6 - 8' @ 1120	
8-12	-	-	-			-	

End of Boring @ 8 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	*SB-13*
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	8'
Project Number:	14-385	Approximate Groundwater Depth:	~8' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0-2	48"	36"			0' - 2' - Brown, SILT, little fine sand, trace fine gravel, trace organic matter (roots), Dry	-	(WELL NOT INSTALLED)
2-4			<1		2' - 4' - Brown, SILT, little fine sand, little fine gravel, Moist	-	
4-6	48"	32"	<1		4' - 6' - Brown, SILT, little fine sand, little fine gravel, Moist	4' - 6' @ 0905	
6-8			<1		6' - 8' - Brown, SILT, some fine gravel, little fine sand, trace organics, Moist	-	
8-12	-	-	-			-	

End of Boring @ 8 ft bgs

Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-14***
Log Completion Date:	1/7/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		BORING/WELL INFORMATION	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	4'
Project Number:	14-385	Approximate Groundwater Depth:	UNKN
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	-
Location:	Meriden, CT	Slot Size:	-
Date Start/Completion:	1/7/2015	Sand:	-
Drilling Contractor:	Metric Earth Services	Screen Length:	-
Drilling Method:	Geoprobe®	Top of Casing Elevation	-

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0-2	48"	37"	<1		0' - 2' - Brown, SILT, organics, trace fine sand, trace fine gravel, Dry	-	(WELL NOT INSTALLED)
2-4			<1		2' - 4' - Brown, SILT, little fine gravel, little medium to fine sand, trace organics, Moist	2' - 4' @ 0915	
4-8	-	-	-			-	
8-12	-	-	-			-	

End of Boring @ 8 ft bgs

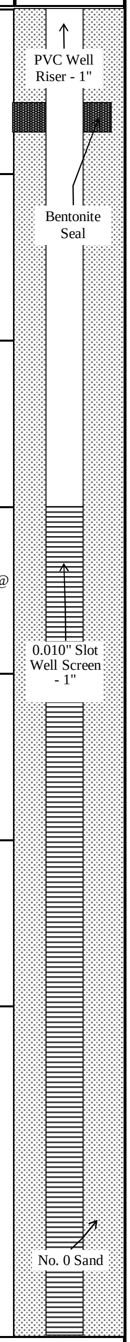
Soil Description: and = 35-50% some = 20-35% little = 10-20% trace = 1-10%

RED TECHNOLOGIES, LLC
REMEDIATION ENGINEERING & DEVELOPMENT

SOIL BORING NO.	***SB-15/MW-2***
Log Completion Date:	1/16/2015
Logged By:	JFC
Logged Checked By:	TM

PROJECT INFORMATION		**BORING/WELL INFORMATION**	
Project Name:	Task 210: Subsurface Site Investigation	Soil Boring Depth:	16'
Project Number:	14-385	Approximate Groundwater Depth:	~9' bgs
Client:	WMC Consulting Engineers	Temporary Well Installation Depth:	16'
Location:	Meriden, CT	Slot Size:	0.010
Date Start/Completion:	1/16/2015	Sand:	No. 0
Drilling Contractor:	Metric Earth Services	Screen Length:	10'
Drilling Method:	Geoprobe®	Top of Casing Elevation	101.755

DEPTH (ft.)	PENETRATION (in.)	RECOVERY (in.)	PID (PPM)	LITHOLOGY	MATERIAL DESCRIPTION	SAMPLE COLLECTION (Depth/Time)	TEMPORARY WELL DIAGRAM
0 - 2	48"	30"	<1		0 - 2' - Brown, SILT, little fine sand, trace fine semi-rounded gravel, trace organics, Dry	-	
2 - 4					2' - 4' - Dark Brown, SILT, some fine sand, trace medium to fine semi-rounded gravel, trace ash material, Dry	-	
4 - 6	48"	29"	<1		4' - 6' - Dark Brown, SILT, little fine sand, trace organic material, Dry	-	
6 - 8					6' - 8' - Dark Brown, SILT, little fine sand, trace fine semi-angular gravel, Moist	6' - 8' @ 1015	
8 - 10	48"	31"	<1		8' - 10' - Brown, SILT, trace fine sand, trace medium rounded gravel, Wet	-	
10 - 12					10' - 12' - Brown, SILT and COARSE SAND, trace fine angular gravel, Saturated	-	
12 - 16	48"	25"	<1		12' - 16' - Brown, COARSE SAND, some fine angular gravel, trace silt, Saturated	-	



End of Boring @ 12 ft bgs

Soil Description: **and = 35-50%** **some = 20-35%** **little = 10-20%** **trace = 1-10%**

APPENDIX B
DQA/DUE Worksheets

Data Quality Assessment Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/7/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH61523 - BH61531*

Sample Number(s)	Compounds	Quality Control Nonconformance	Percent Recovery	Relative Percent Difference	High/Low Bias	Comments
BH61523, BH61525,BH61526, BH61527, BH61528, BH61529	Endrin Endrin Aldehyde	CC	NA	NA	NA	A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.
BH61524, BH61529	2-Nitroaniline, 3-Nitroaniline, Benzidine, Benzoic Acid, Carbazole, Naphthalene, N-Nitrosodiphenylamine, Benzidine, 2-nitrophenol, Hexachlorobenzene	CC	NA	NA	NA	% Deviations for these compounds were not met during continuing calibration. Compounds are typically poorly permforming and data usability was not affected.
BH61524, BH61529	2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol, 3,3'-dichlorobenzidine, Benzidine, 2-nitrophenol, Hexachlorobenzene.	CC	NA	NA	NA	% Deviations for these compounds were not met during continuing calibration. Compounds are typically poorly permforming and data usability was not affected.
BH61526	2-nitrophenol, Hexachlorobenzene	RF	NA	NA	NA	Compounds did not meet recommended response factors .All reported samples were ND for these compounds.

Note other QC nonconformances below (data package inspection, reasonable confidence, chain of custody, sample result, sample preservation and holding time evaluations.

Notes:
Bias High: Reported results may be lower. Reporting limit (RL) acceptable as reported.
Bias Low: Reported results may be higher. RL may be higher than reported.
CC: Continuing calibration.
MS/MSD: Matrix spike/matrix spike duplicate.
LCS: Laboratory control sample.
PP: Poorly performing compounds.

Data Usability Evaluation Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/7/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH61523 - BH61531*

Describe the intended use of the data: *Determination of soil classification for excavation and disposal.*

Nonconformance DQA Review Elements	Briefly Summarize DQA Nonconformances
Laboratory Report Inspection	*None.*
Reasonable Confidence Evaluation	*None.*
Chain of Custody Evaluation	*None.*
Sample Result Evaluation	*None.*
Sample Preservation and Holding Time Evaluation	*None.*
Laboratory Control Samples	*None.*
Surrogates	*None.*
Site Specific Matrix Spikes and Matrix Spike Duplicates	*None.*
Tentatively Identified Compounds	*None.*
Other QC Data	*Continuing calibration for the compounds Endrin Endrin Aldehyde, 2-Nitroaniline, 3-Nitroaniline, Benzidine, Benzoic Acid, Carbazole, Naphthalene, N-Nitrosodiphenylamine, Benzidine, 2-nitrophenol, Hexachlorobenzene, 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol, 3,3'-dichlorobenzidine, Benzidine, 2-nitrophenol, Hexachlorobenzene, 2-nitrophenol, Hexachlorobenzene for samples BH61523, BH61524, BH61525,BH61526, BH61527, BH61528, BH61529. These compounds are considered poorly performing and were ND within the samples identified above. Therefore, data usability has not been affected.*

Data Usability Evaluation Worksheet

Provide a summary statement describing how the analytical data set relied upon is of adequate quality and of sufficient accuracy, precision, and sensitivity for the intended purpose. Questions for the environmental professional to consider during the DUE include, but are not limited to, the following. Please see the text of this guidance for additional information.

How will the analytical data be used?

- Will the analytical results be used to determine compliance with RSR criteria?
- Will the analytical results be used to determine whether a release has occurred?
- Will remediation be conducted?
- Has remediation been conducted?
- Are the results going to be used to guide further investigation?
- Are the results going to be used to guide further remediation (including monitored natural attenuation of groundwater)?
- Will the analytical results be used to evaluate seasonal variability, or homogeneity in an environmental sample?

Laboratory QC Information

- Are significant QC variances reported?
- Are the identified QC nonconformances related to results for substances that are reported as "ND", and the reporting limits are significantly less than RSR criteria?
- Are the nonconformances related to poorly performing compounds that are not constituents of concern?
- Are the nonconformances related to substances that are not constituents of concern?
- Is the reported bias high or low? For cases with low bias, are the results well below applicable RSR criteria or are they close to applicable RSR criteria?
- How do the nonconformances affect "NDs" and reported concentrations?

DQOs

- Were the DQO's precision, accuracy, representativeness, comparability, completeness and sensitivity met?
- Are all critical samples usable for the intended purpose(s)?
- Does sample homogeneity or heterogeneity affect the representativeness of the samples?

CSM

- Do any analytical QC nonconformances create significant data gaps in the Conceptual Site Model?
- Evaluate the entire body of information (type, amount, and quality of data) available for the specific area/release for which the data are presumed to be representative. Determine whether any newer data corroborate the older results and whether both sets of data are consistent with the CSM.
- Consider the risk of being wrong based on risk to potential receptors and the risk to human health and the environment.
- Consider the source of data (e.g., whether the data were generated by the environmental professional's own firm or some other firm, the environmental professional's own involvement with the project, method of collection for the samples, and reporting methods by other firms/laboratories generating the data). Perform a critical review of these data to evaluate its reliability.
- Consider any other site-specific factors.

Pre-RCP Data - See Section 4.5 for information to consider.

Data Quality Assessment Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/9/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH61997 - BH62003*

Sample Number(s)	Compounds	Quality Control Nonconformance	Percent Recovery	Relative Percent Difference	High/Low Bias	Comments
BH61998, BH61999	Trichlorofluoromethane	LCS	22	2	High	The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. Data usability was not affected.

Note other QC nonconformances below (data package inspection, reasonable confidence, chain of custody, sample result, sample preservation and holding time evaluations.

Notes:
Bias High: Reported results may be lower. Reporting limit (RL) acceptable as reported.
Bias Low: Reported results may be higher. RL may be higher than reported.
CC: Continuing calibration.
MS/MSD: Matrix spike/matrix spike duplicate.
LCS: Laboratory control sample.
PP: Poorly performing compounds.

Data Usability Evaluation Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/9/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH61997 - BH62003*

Describe the intended use of the data:	*Determination of soil classification for excavation and disposal.*
Nonconformance DQA Review Elements	**Briefly Summarize DQA Nonconformances**
Laboratory Report Inspection	*None.*
Reasonable Confidence Evaluation	*None.*
Chain of Custody Evaluation	*None.*
Sample Result Evaluation	*None.*
Sample Preservation and Holding Time Evaluation	*None.*
Laboratory Control Samples	*The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. Data usability was not affected.*
Surrogates	*None.*
Site Specific Matrix Spikes and Matrix Spike Duplicates	*None.*
Tentatively Identified Compounds	*None.*
Other QC Data	*According to section 5a of the RCP checklist reporting limits were not specified on the chain of custody.*

Data Usability Evaluation Worksheet

Provide a summary statement describing how the analytical data set relied upon is of adequate quality and of sufficient accuracy, precision, and sensitivity for the intended purpose. Questions for the environmental professional to consider during the DUE include, but are not limited to, the following. Please see the text of this guidance for additional information.

How will the analytical data be used?

- Will the analytical results be used to determine compliance with RSR criteria?
- Will the analytical results be used to determine whether a release has occurred?
- Will remediation be conducted?
- Has remediation been conducted?
- Are the results going to be used to guide further investigation?
- Are the results going to be used to guide further remediation (including monitored natural attenuation of groundwater)?
- Will the analytical results be used to evaluate seasonal variability, or homogeneity in an environmental sample?

Laboratory QC Information

- Are significant QC variances reported?
- Are the identified QC nonconformances related to results for substances that are reported as "ND", and the reporting limits are significantly less than RSR criteria?
- Are the nonconformances related to poorly performing compounds that are not constituents of concern?
- Are the nonconformances related to substances that are not constituents of concern?
- Is the reported bias high or low? For cases with low bias, are the results well below applicable RSR criteria or are they close to applicable RSR criteria?
- How do the nonconformances affect "NDs" and reported concentrations?

DQOs

- Were the DQO's precision, accuracy, representativeness, comparability, completeness and sensitivity met?
- Are all critical samples usable for the intended purpose(s)?
- Does sample homogeneity or heterogeneity affect the representativeness of the samples?

CSM

- Do any analytical QC nonconformances create significant data gaps in the Conceptual Site Model?
- Evaluate the entire body of information (type, amount, and quality of data) available for the specific area/release for which the data are presumed to be representative. Determine whether any newer data corroborate the older results and whether both sets of data are consistent with the CSM.
- Consider the risk of being wrong based on risk to potential receptors and the risk to human health and the environment.
- Consider the source of data (e.g., whether the data were generated by the environmental professional's own firm or some other firm, the environmental professional's own involvement with the project, method of collection for the samples, and reporting methods by other firms/laboratories generating the data). Perform a critical review of these data to evaluate its reliability.
- Consider any other site-specific factors.

Pre-RCP Data - See Section 4.5 for information to consider.

Data Quality Assessment Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/16/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH64208 - BH64216*

Sample Number(s)	Compounds	Quality Control Nonconformance	Percent Recovery	Relative Percent Difference	High/Low Bias	Comments
BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214	Barium, Lead	LCS	NA	NA	NA	The Laboratory Duplicate RPD for one or more analytes exceeds the method criteria, therefore there may be variability in the reported result. The initial calibration met criteria. The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range. The continuing calibration blanks were less than the reporting level for the elements reported. The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria. Data usabilty was not affected.
BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214	Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene, Nitrobenzene-d5	LCS	0.9-13.7	Varies	H	The LCS/LCSD RPD exceeds the method criteria for one or more surrogate/analyte, therefore there may be variability in the reported result. The results are biased on the high side and therefore will not affect data usabillty for its intended use.

Note other QC nonconformances below (data package inspection, reasonable confidence, chain of custody, sample result, sample preservation and holding time evaluations.

Notes:
Bias High: Reported results may be lower. Reporting limit (RL) acceptable as reported.
Bias Low: Reported results may be higher. RL may be higher than reported.
CC: Continuing calibration.
MS/MSD: Matrix spike/matrix spike duplicate.
LCS: Laboratory control sample.
PP: Poorly performing compounds.

Data Usability Evaluation Worksheet

Project Name: *Meriden CT Task 210*

Red Tech File Number: *14-385*

Reviewer: *A. Johnson*

Date Samples Collected: *1/16/2015*

Laboratory: *Phoenix Environmental Laboratories, Inc.*

Sample Group #: *BH64208 - BH64216*

Describe the intended use of the data: *Determination of soil classification for excavation and disposal.*

Nonconformance DQA Review Elements	**Briefly Summarize DQA Nonconformances**
Laboratory Report Inspection	*None.*
Reasonable Confidence Evaluation	*None.*
Chain of Custody Evaluation	*None.*
Sample Result Evaluation	*None.*
Sample Preservation and Holding Time Evaluation	*None.*
Laboratory Control Samples	*The Laboratory Duplicate RPD for barium and lead exceeded the method criteria, therefore there may be variability in the reported result in samples BH64208, BH64209, BH64210, BH64211, BH64212, BH64213 and BH64214 . The initial calibration met criteria. The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range. The continuing calibration blanks were less than the reporting level for the elements reported. The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria. Data usabilty was not affected. The LCS/LCSD RPD exceeded the method criteria for Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene and Nitrobenzene-d5 in samples BH64208, BH64209, BH64210, BH64211, BH64212, BH64213 and BH64214 , therefore there may have been variability in the reported result. The results are biased on the high side and therefore will not affect data usabillty for its intended use.*
Surrogates	*None.*
Site Specific Matrix Spikes and Matrix Spike Duplicates	*None.*
Tentatively Identified Compounds	*None.*
Other QC Data	*According to section 5a of the RCP checklist reporting limits were not specified on the chain of custody.*

Data Usability Evaluation Worksheet

Provide a summary statement describing how the analytical data set relied upon is of adequate quality and of sufficient accuracy, precision, and sensitivity for the intended purpose. Questions for the environmental professional to consider during the DUE include, but are not limited to, the following. Please see the text of this guidance for additional information.

How will the analytical data be used?

- Will the analytical results be used to determine compliance with RSR criteria?
- Will the analytical results be used to determine whether a release has occurred?
- Will remediation be conducted?
- Has remediation been conducted?
- Are the results going to be used to guide further investigation?
- Are the results going to be used to guide further remediation (including monitored natural attenuation of groundwater)?
- Will the analytical results be used to evaluate seasonal variability, or homogeneity in an environmental sample?

Laboratory QC Information

- Are significant QC variances reported?
- Are the identified QC nonconformances related to results for substances that are reported as "ND", and the reporting limits are significantly less than RSR criteria?
- Are the nonconformances related to poorly performing compounds that are not constituents of concern?
- Are the nonconformances related to substances that are not constituents of concern?
- Is the reported bias high or low? For cases with low bias, are the results well below applicable RSR criteria or are they close to applicable RSR criteria?
- How do the nonconformances affect "NDs" and reported concentrations?

DQOs

- Were the DQO's precision, accuracy, representativeness, comparability, completeness and sensitivity met?
- Are all critical samples usable for the intended purpose(s)?
- Does sample homogeneity or heterogeneity affect the representativeness of the samples?

CSM

- Do any analytical QC nonconformances create significant data gaps in the Conceptual Site Model?
- Evaluate the entire body of information (type, amount, and quality of data) available for the specific area/release for which the data are presumed to be representative. Determine whether any newer data corroborate the older results and whether both sets of data are consistent with the CSM.
- Consider the risk of being wrong based on risk to potential receptors and the risk to human health and the environment.
- Consider the source of data (e.g., whether the data were generated by the environmental professional's own firm or some other firm, the environmental professional's own involvement with the project, method of collection for the samples, and reporting methods by other firms/laboratories generating the data). Perform a critical review of these data to evaluate its reliability.
- Consider any other site-specific factors.

Pre-RCP Data - See Section 4.5 for information to consider.

Data Quality Assessment Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/19/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH64994 - BH64996*

Sample Number(s)	Compounds	Quality Control Nonconformance	Percent Recovery	Relative Percent Difference	High/Low Bias	Comments
BH64994, BH64995, BH64996	Bromomethane, Dichlorodifluoromethane	LCS	21-31	1-11	High	The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. The QC recovery for one or more analytes is above the upper range but were not reported in the sample(s), therefore no significant bias is suspected. Data usability is not affected.
BH64994, BH64995, BH64996	Ext. Petroleum HC	LCS	59	1	Low	The LCS and/or the LCSD recovery is below the method criteria. All of the other QC is acceptable, therefore no significant bias is suspected. (Ext. Petroleum HC). Data usabilty is not affected.

Note other QC nonconformances below (data package inspection, reasonable confidence, chain of custody, sample result, sample preservation and holding time evaluations.

Notes:
Bias High: Reported results may be lower. Reporting limit (RL) acceptable as reported.
Bias Low: Reported results may be higher. RL may be higher than reported.
CC: Continuing calibration.
MS/MSD: Matrix spike/matrix spike duplicate.
LCS: Laboratory control sample.
PP: Poorly performing compounds.

Data Usability Evaluation Worksheet

Project Name: *Meriden CT Task 210*
Red Tech File Number: *14-385*
Reviewer: *A. Johnson*
Date Samples Collected: *1/19/2015*
Laboratory: *Phoenix Environmental Laboratories, Inc.*
Sample Group #: *BH64994 - BH64996*

Describe the intended use of the data: *Determination of soil classification for excavation and disposal.*

Nonconformance DQA Review Elements	Briefly Summarize DQA Nonconformances
Laboratory Report Inspection	*None.*
Reasonable Confidence Evaluation	*None.*
Chain of Custody Evaluation	*None.*
Sample Result Evaluation	*None.*
Sample Preservation and Holding Time Evaluation	*None.*
Laboratory Control Samples	*The LCS and/or the LCSD recovery is above the upper range for Bromomethane, Dichlorodifluoromethaneone in samples BH64994, BH64995, and BH64996, therefore no significant bias is suspected. The QC recovery for one or more analyte in samples BH64994, BH64995, and BH64996 is above the upper range but were not reported in the sample(s), therefore no significant bias is suspected. Data usability is not affected The LCS and/or the LCSD recovery for extractable petroleum hydrocarbons for samples BH64994, BH64995, BH64996 is below the method criteria. All of the other QC is acceptable, therefore no significant bias is suspected. (Ext. Petroleum HC). Data usabilty is not affected.*
Surrogates	*None.*
Site Specific Matrix Spikes and Matrix Spike Duplicates	*None.*
Tentatively Identified Compounds	*None.*
Other QC Data	*According to section 5a of the RCP checklist reporting limits were not specified on the chain of custody.*

Data Usability Evaluation Worksheet

Provide a summary statement describing how the analytical data set relied upon is of adequate quality and of sufficient accuracy, precision, and sensitivity for the intended purpose. Questions for the environmental professional to consider during the DUE include, but are not limited to, the following. Please see the text of this guidance for additional information.

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- Has remediation been conducted?
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- Are the results going to be used to guide further remediation (including monitored natural attenuation of groundwater)?
- Will the analytical results be used to evaluate seasonal variability, or homogeneity in an environmental sample?

Laboratory QC Information

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- Are the nonconformances related to poorly performing compounds that are not constituents of concern?
- Are the nonconformances related to substances that are not constituents of concern?
- Is the reported bias high or low? For cases with low bias, are the results well below applicable RSR criteria or are they close to applicable RSR criteria?
- How do the nonconformances affect "NDs" and reported concentrations?

DQOs

- Were the DQO's precision, accuracy, representativeness, comparability, completeness and sensitivity met?
- Are all critical samples usable for the intended purpose(s)?
- Does sample homogeneity or heterogeneity affect the representativeness of the samples?

CSM

- Do any analytical QC nonconformances create significant data gaps in the Conceptual Site Model?
- Evaluate the entire body of information (type, amount, and quality of data) available for the specific area/release for which the data are presumed to be representative. Determine whether any newer data corroborate the older results and whether both sets of data are consistent with the CSM.
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- Consider the source of data (e.g., whether the data were generated by the environmental professional's own firm or some other firm, the environmental professional's own involvement with the project, method of collection for the samples, and reporting methods by other firms/laboratories generating the data). Perform a critical review of these data to evaluate its reliability.
- Consider any other site-specific factors.

Pre-RCP Data - See Section 4.5 for information to consider.

APPENDIX C
Laboratory Analytical Reports

PHOENIX
Environmental Laboratories, Inc.

Thursday, January 15, 2015

Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Project ID: CENTER ST., BRIDGE
Sample ID#s: BH61523 - BH61531

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	9:05
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61523

Project ID: CENTER ST., BRIDGE
Client ID: SB-13 4-6

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	01/12/15	EK	SW6010
Arsenic	2.3	0.8	mg/Kg	01/12/15	EK	SW6010
Barium	175	0.39	mg/Kg	01/12/15	EK	SW6010
Cadmium	1.22	0.39	mg/Kg	01/12/15	EK	SW6010
Chromium	18.3	0.39	mg/Kg	01/12/15	EK	SW6010
Mercury	0.14	0.07	mg/Kg	01/12/15	RS	SW-7471
Lead	224	3.9	mg/Kg	01/12/15	LK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.036	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	0.012	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	86		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/12/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	480	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	48	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	96	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	48	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	96	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	69		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	94	58	mg/Kg	01/10/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/10/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	93		%	01/10/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	390	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	88		%	01/12/15	AW	30 - 150 %
% TCMX	87		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.7	ug/Kg	01/12/15	CE	SW8081
4,4' -DDE	ND	7.7	ug/Kg	01/12/15	CE	SW8081
4,4' -DDT	ND	7.7	ug/Kg	01/12/15	CE	SW8081
a-BHC	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Alachlor	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Aldrin	ND	3.9	ug/Kg	01/12/15	CE	SW8081
b-BHC	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Chlordane	ND	39	ug/Kg	01/12/15	CE	SW8081
d-BHC	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Dieldrin	ND	3.9	ug/Kg	01/12/15	CE	SW8081
Endosulfan I	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Endosulfan II	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Endosulfan sulfate	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Endrin	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Endrin aldehyde	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Endrin ketone	ND	7.7	ug/Kg	01/12/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-13 4-6

Phoenix I.D.: BH61523

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/12/15	CE	SW8081
Heptachlor	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Heptachlor epoxide	ND	7.7	ug/Kg	01/12/15	CE	SW8081
Methoxychlor	ND	39	ug/Kg	01/12/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/12/15	CE	SW8081
QA/QC Surrogates						
% DCBP	94		%	01/12/15	CE	30 - 150 %
% TCMX	84		%	01/12/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.0	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	25	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	25	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	30	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: SB-13 4-6

Phoenix I.D.: BH61523

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.0	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	30	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	9.9	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	9.9	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	9.9	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	4.9	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	105		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	89		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	104		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	97		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Acenaphthene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Acenaphthylene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Anthracene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Benz(a)anthracene	320	270	ug/Kg	01/09/15	DD	SW 8270
Benzo(a)pyrene	280	270	ug/Kg	01/09/15	DD	SW 8270
Benzo(b)fluoranthene	370	270	ug/Kg	01/09/15	DD	SW 8270
Benzo(ghi)perylene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Benzo(k)fluoranthene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Chrysene	300	270	ug/Kg	01/09/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Fluoranthene	650	270	ug/Kg	01/09/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Naphthalene	ND	270	ug/Kg	01/09/15	DD	SW 8270
Phenanthrene	460	270	ug/Kg	01/09/15	DD	SW 8270
Pyrene	520	270	ug/Kg	01/09/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	78		%	01/09/15	DD	30 - 130 %
% Nitrobenzene-d5	76		%	01/09/15	DD	30 - 130 %
% Terphenyl-d14	89		%	01/09/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C16 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	9:15
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61524

Project ID: CENTER ST., BRIDGE
Client ID: SB-14 2-4

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 2.0	2.0	mg/Kg	01/12/15	EK	SW6010
Arsenic	5.8	0.7	mg/Kg	01/12/15	EK	SW6010
Barium	72.9	0.36	mg/Kg	01/12/15	EK	SW6010
Cadmium	0.70	0.36	mg/Kg	01/12/15	EK	SW6010
Chromium	13.5	0.36	mg/Kg	01/12/15	EK	SW6010
Mercury	0.68	0.07	mg/Kg	01/12/15	RS	SW-7471
Lead	222	3.6	mg/Kg	01/13/15	LK	SW6010
Selenium	< 1.5	1.5	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.046	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	0.116	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	86		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/12/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-14 2-4

Phoenix I.D.: BH61524

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	480	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	48	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	96	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	48	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	96	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	55		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	1400	120	mg/Kg	01/12/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/12/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	113		%	01/12/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	82		%	01/12/15	AW	30 - 150 %
% TCMX	82		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.6	ug/Kg	01/13/15	CE	SW8081
4,4' -DDE	ND	7.6	ug/Kg	01/13/15	CE	SW8081
4,4' -DDT	ND	7.6	ug/Kg	01/13/15	CE	SW8081
a-BHC	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Alachlor	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/13/15	CE	SW8081
b-BHC	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/13/15	CE	SW8081
d-BHC	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/13/15	CE	SW8081
Endosulfan I	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Endosulfan II	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Endosulfan sulfate	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Endrin	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Endrin aldehyde	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Endrin ketone	ND	7.6	ug/Kg	01/13/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-14 2-4

Phoenix I.D.: BH61524

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/13/15	CE	SW8081
Heptachlor	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Heptachlor epoxide	ND	7.6	ug/Kg	01/13/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/13/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/13/15	CE	SW8081
QA/QC Surrogates						
% DCBP	72		%	01/13/15	CE	30 - 150 %
% TCMX	88		%	01/13/15	CE	30 - 150 %

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.7	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	31	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	31	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	37	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.7	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	37	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	12	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	6.1	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	113		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	81		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	117		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	102		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Acenaphthene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Acenaphthylene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Anthracene	990	530	ug/Kg	01/12/15	DD	SW 8270
Benz(a)anthracene	2400	530	ug/Kg	01/12/15	DD	SW 8270
Benzo(a)pyrene	2400	530	ug/Kg	01/12/15	DD	SW 8270
Benzo(b)fluoranthene	3500	530	ug/Kg	01/12/15	DD	SW 8270
Benzo(ghi)perylene	910	530	ug/Kg	01/12/15	DD	SW 8270
Benzo(k)fluoranthene	950	530	ug/Kg	01/12/15	DD	SW 8270
Chrysene	2700	530	ug/Kg	01/12/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Fluoranthene	4500	530	ug/Kg	01/12/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	890	530	ug/Kg	01/12/15	DD	SW 8270
Naphthalene	ND	530	ug/Kg	01/12/15	DD	SW 8270
Phenanthrene	4100	530	ug/Kg	01/12/15	DD	SW 8270
Pyrene	4500	530	ug/Kg	01/12/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	75		%	01/12/15	DD	30 - 130 %
% Nitrobenzene-d5	66		%	01/12/15	DD	30 - 130 %
% Terphenyl-d14	77		%	01/12/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Semi-Volatile Comment:
Due to a matrix interference and/or the presence of a large amount of non-target material in the sample, a dilution was required resulting in an elevated RL for the semivolatile analysis.

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C12 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	9:40
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61525

Project ID: CENTER ST., BRIDGE
Client ID: SB-7 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.41	0.41	mg/Kg	01/12/15	EK	SW6010
Arsenic	2.7	0.8	mg/Kg	01/12/15	EK	SW6010
Barium	97.8	0.41	mg/Kg	01/12/15	EK	SW6010
Cadmium	< 0.41	0.41	mg/Kg	01/12/15	EK	SW6010
Chromium	25.9	0.41	mg/Kg	01/12/15	EK	SW6010
Mercury	< 0.07	0.07	mg/Kg	01/12/15	RS	SW-7471
Lead	25.8	0.41	mg/Kg	01/12/15	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.051	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	88		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/12/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-7 8-10

Phoenix I.D.: BH61525

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	93	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	93	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	68		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	90	57	mg/Kg	01/10/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/10/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	83		%	01/10/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	370	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	370	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	97		%	01/12/15	AW	30 - 150 %
% TCMX	89		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.4	ug/Kg	01/12/15	CE	SW8081
4,4' -DDE	ND	7.4	ug/Kg	01/12/15	CE	SW8081
4,4' -DDT	ND	7.4	ug/Kg	01/12/15	CE	SW8081
a-BHC	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Alachlor	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Aldrin	ND	3.7	ug/Kg	01/12/15	CE	SW8081
b-BHC	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Chlordane	ND	37	ug/Kg	01/12/15	CE	SW8081
d-BHC	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Dieldrin	ND	3.7	ug/Kg	01/12/15	CE	SW8081
Endosulfan I	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Endosulfan II	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Endosulfan sulfate	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Endrin	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Endrin aldehyde	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Endrin ketone	ND	7.4	ug/Kg	01/12/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/12/15	CE	SW8081
Heptachlor	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Heptachlor epoxide	ND	7.4	ug/Kg	01/12/15	CE	SW8081
Methoxychlor	ND	37	ug/Kg	01/12/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/12/15	CE	SW8081
QA/QC Surrogates						
% DCBP	90		%	01/12/15	CE	30 - 150 %
% TCMX	94		%	01/12/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.1	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	26	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	26	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	31	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.1	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	31	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	10	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	5.1	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	105		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	88		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	110		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benz(a)anthracene	420	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(a)pyrene	270	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(b)fluoranthene	410	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Chrysene	370	260	ug/Kg	01/09/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Fluoranthene	730	260	ug/Kg	01/09/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Phenanthrene	560	260	ug/Kg	01/09/15	DD	SW 8270
Pyrene	520	260	ug/Kg	01/09/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	84		%	01/09/15	DD	30 - 130 %
% Nitrobenzene-d5	83		%	01/09/15	DD	30 - 130 %
% Terphenyl-d14	85		%	01/09/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C18 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	11:05
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61526

Project ID: CENTER ST., BRIDGE
Client ID: SB-6 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.38	0.38	mg/Kg	01/12/15	EK	SW6010
Arsenic	1.5	0.8	mg/Kg	01/12/15	EK	SW6010
Barium	85.0	0.38	mg/Kg	01/12/15	EK	SW6010
Cadmium	< 0.38	0.38	mg/Kg	01/12/15	EK	SW6010
Chromium	15.6	0.38	mg/Kg	01/12/15	EK	SW6010
Mercury	< 0.06	0.06	mg/Kg	01/12/15	RS	SW-7471
Lead	6.82	0.38	mg/Kg	01/12/15	EK	SW6010
Selenium	< 1.5	1.5	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	0.005	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.085	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	0.016	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	93		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/12/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-6 8-10

Phoenix I.D.: BH61526

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	44	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	44	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	44	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	440	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	44	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	88	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	44	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	88	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	62		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	220	53	mg/Kg	01/10/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/10/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	75		%	01/10/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	350	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	350	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	118		%	01/12/15	AW	30 - 150 %
% TCMX	100		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.1	ug/Kg	01/12/15	CE	SW8081
4,4' -DDE	ND	7.1	ug/Kg	01/12/15	CE	SW8081
4,4' -DDT	ND	7.1	ug/Kg	01/12/15	CE	SW8081
a-BHC	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Alachlor	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Aldrin	ND	3.5	ug/Kg	01/12/15	CE	SW8081
b-BHC	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Chlordane	ND	35	ug/Kg	01/12/15	CE	SW8081
d-BHC	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Dieldrin	ND	3.5	ug/Kg	01/12/15	CE	SW8081
Endosulfan I	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Endosulfan II	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Endosulfan sulfate	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Endrin	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Endrin aldehyde	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Endrin ketone	ND	7.1	ug/Kg	01/12/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-6 8-10

Phoenix I.D.: BH61526

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.4	ug/Kg	01/12/15	CE	SW8081
Heptachlor	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Heptachlor epoxide	ND	7.1	ug/Kg	01/12/15	CE	SW8081
Methoxychlor	ND	35	ug/Kg	01/12/15	CE	SW8081
Toxaphene	ND	140	ug/Kg	01/12/15	CE	SW8081
QA/QC Surrogates						
% DCBP	106		%	01/12/15	CE	30 - 150 %
% TCMX	100		%	01/12/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.3	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	52	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	18	5.5	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	28	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	28	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	33	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.3	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	33	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	44	5.5	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	11	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	5.5	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	103		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	89		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	108		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	94		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Acenaphthene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Acenaphthylene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Anthracene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Benz(a)anthracene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Benzo(a)pyrene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Benzo(b)fluoranthene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Benzo(ghi)perylene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Benzo(k)fluoranthene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Chrysene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Fluoranthene	ND	250	ug/Kg	01/10/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Naphthalene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Phenanthrene	ND	250	ug/Kg	01/10/15	DD	SW 8270
Pyrene	ND	250	ug/Kg	01/10/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	82		%	01/10/15	DD	30 - 130 %
% Nitrobenzene-d5	78		%	01/10/15	DD	30 - 130 %
% Terphenyl-d14	67		%	01/10/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C9 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	12:45
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61527

Project ID: CENTER ST., BRIDGE
Client ID: SB-10 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	01/12/15	EK	SW6010
Arsenic	1.9	0.7	mg/Kg	01/12/15	EK	SW6010
Barium	77.7	0.35	mg/Kg	01/12/15	EK	SW6010
Cadmium	< 0.35	0.35	mg/Kg	01/12/15	EK	SW6010
Chromium	19.2	0.35	mg/Kg	01/12/15	EK	SW6010
Mercury	< 0.09	0.09	mg/Kg	01/13/15	RS	SW-7471
Lead	10.3	0.35	mg/Kg	01/12/15	EK	SW6010
Selenium	< 1.4	1.4	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.023	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	86		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/13/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	480	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	48	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	96	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	48	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	96	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	63		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	200	57	mg/Kg	01/10/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/10/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	78		%	01/10/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	108		%	01/12/15	AW	30 - 150 %
% TCMX	99		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.6	ug/Kg	01/12/15	CE	SW8081
4,4' -DDE	ND	7.6	ug/Kg	01/12/15	CE	SW8081
4,4' -DDT	ND	7.6	ug/Kg	01/12/15	CE	SW8081
a-BHC	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Alachlor	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/12/15	CE	SW8081
b-BHC	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/12/15	CE	SW8081
d-BHC	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/12/15	CE	SW8081
Endosulfan I	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Endosulfan II	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Endosulfan sulfate	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Endrin	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Endrin aldehyde	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Endrin ketone	ND	7.6	ug/Kg	01/12/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-10 8-10

Phoenix I.D.: BH61527

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/12/15	CE	SW8081
Heptachlor	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Heptachlor epoxide	ND	7.6	ug/Kg	01/12/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/12/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/12/15	CE	SW8081
QA/QC Surrogates						
% DCBP	97		%	01/12/15	CE	30 - 150 %
% TCMX	96		%	01/12/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.2	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	27	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	27	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	32	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.2	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	32	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	11	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	5.4	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	104		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	103		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	101		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/09/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-10 8-10

Phoenix I.D.: BH61527

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/09/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/09/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	82		%	01/09/15	DD	30 - 130 %
% Nitrobenzene-d5	83		%	01/09/15	DD	30 - 130 %
% Terphenyl-d14	95		%	01/09/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C16 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	13:40
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61528

Project ID: CENTER ST., BRIDGE
Client ID: SB-8 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	01/12/15	EK	SW6010
Arsenic	1.8	0.8	mg/Kg	01/12/15	EK	SW6010
Barium	71.2	0.39	mg/Kg	01/12/15	EK	SW6010
Cadmium	< 0.39	0.39	mg/Kg	01/12/15	EK	SW6010
Chromium	24.2	0.39	mg/Kg	01/12/15	EK	SW6010
Mercury	< 0.09	0.09	mg/Kg	01/13/15	RS	SW-7471
Lead	13.2	0.39	mg/Kg	01/12/15	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.053	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	0.011	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	87		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/13/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-8 8-10

Phoenix I.D.: BH61528

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	48	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	480	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	48	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	96	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	48	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	96	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	54		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	2000	280	mg/Kg	01/12/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/12/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	134		%	01/12/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	102		%	01/12/15	AW	30 - 150 %
% TCMX	86		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.6	ug/Kg	01/14/15	CE	SW8081
4,4' -DDE	ND	7.6	ug/Kg	01/14/15	CE	SW8081
4,4' -DDT	22	7.6	ug/Kg	01/14/15	CE	SW8081
a-BHC	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Alachlor	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/14/15	CE	SW8081
b-BHC	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/14/15	CE	SW8081
d-BHC	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/14/15	CE	SW8081
Endosulfan I	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Endosulfan II	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Endosulfan sulfate	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Endrin	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Endrin aldehyde	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Endrin ketone	ND	7.6	ug/Kg	01/14/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-8 8-10

Phoenix I.D.: BH61528

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/14/15	CE	SW8081
Heptachlor	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Heptachlor epoxide	ND	7.6	ug/Kg	01/14/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/14/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/14/15	CE	SW8081
QA/QC Surrogates						
% DCBP	79		%	01/14/15	CE	30 - 150 %
% TCMX	79		%	01/14/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,1,1-Trichloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	4.6	ug/Kg	01/10/15	JLI	SW8260
1,1,2-Trichloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,1-Dichloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,1-Dichloroethene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,1-Dichloropropene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2,3-Trichloropropane	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2-Dibromoethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,2-Dichlorobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,2-Dichloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,2-Dichloropropane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,3-Dichlorobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
1,3-Dichloropropane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
1,4-Dichlorobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
2,2-Dichloropropane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
2-Chlorotoluene	ND	290	ug/Kg	01/10/15	JLI	SW8260
2-Hexanone	ND	38	ug/Kg	01/10/15	JLI	SW8260
2-Isopropyltoluene	ND	290	ug/Kg	01/10/15	JLI	SW8260
4-Chlorotoluene	ND	290	ug/Kg	01/10/15	JLI	SW8260
4-Methyl-2-pentanone	ND	38	ug/Kg	01/10/15	JLI	SW8260
Acetone	ND	46	ug/Kg	01/10/15	JLI	SW8260
Acrylonitrile	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Benzene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Bromobenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
Bromochloromethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Bromodichloromethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Bromoform	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Bromomethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Carbon Disulfide	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Carbon tetrachloride	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Chlorobenzene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Chloroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Chloroform	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Chloromethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Dibromochloromethane	ND	4.6	ug/Kg	01/10/15	JLI	SW8260
Dibromomethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Dichlorodifluoromethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Ethylbenzene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Hexachlorobutadiene	ND	290	ug/Kg	01/10/15	JLI	SW8260
Isopropylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
m&p-Xylene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Methyl Ethyl Ketone	ND	46	ug/Kg	01/10/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	15	ug/Kg	01/10/15	JLI	SW8260
Methylene chloride	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Naphthalene	ND	290	ug/Kg	01/10/15	JLI	SW8260
n-Butylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
n-Propylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
o-Xylene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
p-Isopropyltoluene	ND	290	ug/Kg	01/10/15	JLI	SW8260
sec-Butylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
Styrene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
tert-Butylbenzene	ND	290	ug/Kg	01/10/15	JLI	SW8260
Tetrachloroethene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	15	ug/Kg	01/10/15	JLI	SW8260
Toluene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Total Xylenes	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	580	ug/Kg	01/10/15	JLI	SW8260
Trichloroethene	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Trichlorofluoromethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Trichlorotrifluoroethane	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
Vinyl chloride	ND	7.6	ug/Kg	01/10/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	105		%	01/10/15	JLI	70 - 130 %
% Bromofluorobenzene	112		%	01/10/15	JLI	70 - 130 %
% Dibromofluoromethane	112		%	01/10/15	JLI	70 - 130 %
% Toluene-d8	104		%	01/10/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Chrysene	450	260	ug/Kg	01/10/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/10/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/10/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/10/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	62		%	01/10/15	DD	30 - 130 %
% Nitrobenzene-d5	85		%	01/10/15	DD	30 - 130 %
% Terphenyl-d14	96		%	01/10/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Volatile Comment:
There was a suppression of the last internal standard in the low level analysis, all affected compounds are reported from the methanol preserved high level analysis which did not exhibit this interference.

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C9 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	14:35
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61529

Project ID: CENTER ST., BRIDGE
Client ID: SB-9 6-8

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	01/12/15	EK	SW6010
Arsenic	4.3	0.8	mg/Kg	01/12/15	EK	SW6010
Barium	89.4	0.39	mg/Kg	01/12/15	EK	SW6010
Cadmium	< 0.39	0.39	mg/Kg	01/12/15	EK	SW6010
Chromium	27.1	0.39	mg/Kg	01/12/15	EK	SW6010
Mercury	< 0.08	0.08	mg/Kg	01/13/15	RS	SW-7471
Lead	9.28	0.39	mg/Kg	01/12/15	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/12/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Arsenic	0.004	0.004	mg/L	01/12/15	EK	SW6010
SPLP Barium	0.043	0.010	mg/L	01/12/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/12/15	EK	SW6010
SPLP Chromium	0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/12/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/12/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/12/15	EK	SW6010
SPLP Metals Digestion	Completed			01/12/15	I/I	SW846-3005
Percent Solid	85		%	01/09/15	I	SW846
Soil Extraction for PCB	Completed			01/09/15	CC/H	SW3545
Soil Extraction for Pesticide	Completed			01/09/15	CC	SW3545
Soil Extraction SVOA PAH	Completed			01/09/15	JJ/VH	SW3545
Extraction of CT ETPH	Completed			01/09/15	JC/V	3545
Mercury Digestion	Completed			01/13/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/09/15	/D	SW8151
SPLP Digestion Mercury	Completed			01/12/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/09/15	I	EPA 1312
Total Metals Digest	Completed			01/09/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/07/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-9 6-8

Phoenix I.D.: BH61529

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	49	ug/Kg	01/12/15	BB	SW8151
2,4,5-TP (Silvex)	ND	49	ug/Kg	01/12/15	BB	SW8151
2,4-D	ND	49	ug/Kg	01/12/15	BB	SW8151
2,4-DB	ND	490	ug/Kg	01/12/15	BB	SW8151
Dalapon	ND	49	ug/Kg	01/12/15	BB	SW8151
Dicamba	ND	97	ug/Kg	01/12/15	BB	SW8151
Dichloroprop	ND	49	ug/Kg	01/12/15	BB	SW8151
Dinoseb	ND	97	ug/Kg	01/12/15	BB	SW8151
QA/QC Surrogates						
% DCAA	61		%	01/12/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	340	120	mg/Kg	01/12/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/12/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	76		%	01/12/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1221	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1232	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1242	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1248	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1254	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1260	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1262	ND	390	ug/Kg	01/12/15	AW	SW 8082
PCB-1268	ND	390	ug/Kg	01/12/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	124		%	01/12/15	AW	30 - 150 %
% TCMX	107		%	01/12/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.8	ug/Kg	01/12/15	CE	SW8081
4,4' -DDE	ND	7.8	ug/Kg	01/12/15	CE	SW8081
4,4' -DDT	ND	7.8	ug/Kg	01/12/15	CE	SW8081
a-BHC	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Alachlor	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Aldrin	ND	3.9	ug/Kg	01/12/15	CE	SW8081
b-BHC	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Chlordane	ND	39	ug/Kg	01/12/15	CE	SW8081
d-BHC	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Dieldrin	ND	3.9	ug/Kg	01/12/15	CE	SW8081
Endosulfan I	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Endosulfan II	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Endosulfan sulfate	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Endrin	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Endrin aldehyde	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Endrin ketone	ND	7.8	ug/Kg	01/12/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-9 6-8

Phoenix I.D.: BH61529

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.6	ug/Kg	01/12/15	CE	SW8081
Heptachlor	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Heptachlor epoxide	ND	7.8	ug/Kg	01/12/15	CE	SW8081
Methoxychlor	ND	39	ug/Kg	01/12/15	CE	SW8081
Toxaphene	ND	160	ug/Kg	01/12/15	CE	SW8081
QA/QC Surrogates						
% DCBP	95		%	01/12/15	CE	30 - 150 %
% TCMX	99		%	01/12/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.5	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	29	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
4-Chlorotoluene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	29	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	35	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.5	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	35	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	12	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	5.8	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	104		%	01/09/15	JLI	70 - 130 %
% Bromofluorobenzene	94		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	104		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	98		%	01/09/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Acenaphthene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Acenaphthylene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Anthracene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Benz(a)anthracene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Benzo(a)pyrene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Benzo(b)fluoranthene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Benzo(ghi)perylene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Benzo(k)fluoranthene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Chrysene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Fluoranthene	ND	550	ug/Kg	01/12/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-9 6-8

Phoenix I.D.: BH61529

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Naphthalene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Phenanthrene	ND	550	ug/Kg	01/12/15	DD	SW 8270
Pyrene	ND	550	ug/Kg	01/12/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	84		%	01/12/15	DD	30 - 130 %
% Nitrobenzene-d5	73		%	01/12/15	DD	30 - 130 %
% Terphenyl-d14	94		%	01/12/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

Semi-Volatile Comment:
Due to a matrix interference and/or the presence of a large amount of non-target material in the sample, a dilution was required resulting in an elevated RL for the semivolatile analysis.

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C12 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	0:00
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61530

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK HIGH

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Percent Solid	100	1	%	01/07/15		SW846
Field Extraction	Completed			01/07/15		SW5035

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	250	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	250	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	250	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	1300	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	250	ug/Kg	01/09/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK HIGH

Phoenix I.D.: BH61530

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
4-Chlorotoluene	ND	250	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	1300	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	5000	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	500	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	250	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	250	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	250	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	250	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
cis-1,2-Dichloroethene	ND	250	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	3000	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	250	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	500	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	250	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	250	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	250	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	250	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	500	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	250	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	250	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	250	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	500	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	250	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	250	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	250	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	104		%	01/09/15	JLI	70 - 130 %

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK HIGH

Phoenix I.D.: BH61530

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Bromofluorobenzene	96		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	99		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	100		%	01/09/15	JLI	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.
TRIP BLANK INCLUDED

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:	JC	01/07/15	0:00
Location Code:	REDTECH	Received by:	LB	01/09/15	14:28
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61523
Phoenix ID: BH61531

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Percent Solid	100	1	%	01/07/15		SW846
Field Extraction	Completed			01/07/15		SW5035

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.0	ug/Kg	01/09/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloroethene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,1-Dichloropropene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2-Dibromoethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,2-Dichloropropane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,3-Dichloropropane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
2,2-Dichloropropane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
2-Chlorotoluene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
2-Hexanone	ND	25	ug/Kg	01/09/15	JLI	SW8260
2-Isopropyltoluene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Phoenix I.D.: BH61531

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
4-Chlorotoluene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
4-Methyl-2-pentanone	ND	25	ug/Kg	01/09/15	JLI	SW8260
Acetone	ND	30	ug/Kg	01/09/15	JLI	SW8260
Acrylonitrile	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Benzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Bromobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Bromochloromethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Bromodichloromethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Bromoform	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Bromomethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Carbon Disulfide	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Carbon tetrachloride	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Chlorobenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Chloroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Chloroform	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Chloromethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
cis-1,2-Dichloroethene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Dibromochloromethane	ND	3.0	ug/Kg	01/09/15	JLI	SW8260
Dibromomethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Ethylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Hexachlorobutadiene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Isopropylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
m&p-Xylene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Methyl Ethyl Ketone	ND	30	ug/Kg	01/09/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	01/09/15	JLI	SW8260
Methylene chloride	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Naphthalene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
n-Butylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
n-Propylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
o-Xylene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
p-Isopropyltoluene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
sec-Butylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Styrene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
tert-Butylbenzene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Tetrachloroethene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	10	ug/Kg	01/09/15	JLI	SW8260
Toluene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Total Xylenes	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	01/09/15	JLI	SW8260
Trichloroethene	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Trichlorofluoromethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
Vinyl chloride	ND	5.0	ug/Kg	01/09/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	102		%	01/09/15	JLI	70 - 130 %

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Phoenix I.D.: BH61531

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Bromofluorobenzene	94		%	01/09/15	JLI	70 - 130 %
% Dibromofluoromethane	96		%	01/09/15	JLI	70 - 130 %
% Toluene-d8	103		%	01/09/15	JLI	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.
TRIP BLANK INCLUDED

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 15, 2015

QA/QC Data

SDG I.D.: GBH61523

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296556, QC Sample No: BH60360 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)												
ICP Metals - SPLP Extraction												
Arsenic	BRL	<0.004	<0.004	NC	100	101	1.0	103	105	1.9	75 - 125	20
Barium	BRL	<0.010	<0.010	NC	102	102	0.0	105	107	1.9	75 - 125	20
Cadmium	BRL	<0.005	<0.005	NC	101	102	1.0	105	105	0.0	75 - 125	20
Chromium	BRL	<0.010	<0.010	NC	101	102	1.0	104	105	1.0	75 - 125	20
Lead	BRL	<0.010	<0.010	NC	99.1	99.8	0.7	102	104	1.9	75 - 125	20
Selenium	BRL	<0.020	<0.020	NC	102	102	0.0	104	107	2.8	75 - 125	20
Silver	BRL	<0.010	<0.010	NC	97.8	98.0	0.2	101	102	1.0	75 - 125	20
QA/QC Batch 296730, QC Sample No: BH61516 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)												
ICP Metals - Soil												
Arsenic	BRL	2.0	2.43	NC	104	101	2.9	95.0	93.9	1.2	75 - 125	30
Barium	BRL	230	235	2.20	116	115	0.9	113	105	7.3	75 - 125	30
Cadmium	BRL	<0.48	<0.42	NC	95.2	94.6	0.6	97.2	96.1	1.1	75 - 125	30
Chromium	BRL	39.2	40.0	2.00	110	108	1.8	106	104	1.9	75 - 125	30
Lead	BRL	11.1	10.9	1.80	97.4	96.5	0.9	97.9	96.6	1.3	75 - 125	30
Selenium	BRL	<1.9	<1.7	NC	98.3	95.2	3.2	87.2	86.5	0.8	75 - 125	30
Silver	BRL	<0.48	<0.42	NC	110	104	5.6	103	103	0.0	75 - 125	30
QA/QC Batch 296785, QC Sample No: BH61519 (BH61523, BH61524, BH61525, BH61526)												
Mercury - Soil	BRL	0.24	0.21	NC	105	102	2.9	98.5	85.2	14.5	70 - 130	30
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												
QA/QC Batch 296789, QC Sample No: BH61591 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)												
Mercury - Water	BRL	<0.0002	<0.0002	NC	92.5	89.4	3.4	94.8	86.1	9.6	70 - 130	20
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												
QA/QC Batch 296883, QC Sample No: BH61843 (BH61527, BH61528, BH61529)												
Mercury - Soil	BRL	<0.08	<0.08	NC	110	107	2.8	109	100	8.6	70 - 130	30
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												

PHOENIX

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QA/QC Report

January 15, 2015

QA/QC Data

SDG I.D.: GBH61523

QA/QC Batch 296633, QC Sample No: BH61283 (BH61523, BH61524, BH61525)

Polynuclear Aromatic HC - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2-Methylnaphthalene	ND	85	87	2.3	83	68	19.9	30 - 130	30	
Acenaphthene	ND	95	99	4.1	90	75	18.2	30 - 130	30	
Acenaphthylene	ND	90	95	5.4	88	70	22.8	30 - 130	30	
Anthracene	ND	97	102	5.0	96	77	22.0	30 - 130	30	
Benz(a)anthracene	ND	98	102	4.0	94	76	21.2	30 - 130	30	
Benzo(a)pyrene	ND	95	101	6.1	93	74	22.8	30 - 130	30	
Benzo(b)fluoranthene	ND	96	99	3.1	93	76	20.1	30 - 130	30	
Benzo(ghi)perylene	ND	98	99	1.0	93	76	20.1	30 - 130	30	
Benzo(k)fluoranthene	ND	93	99	6.3	93	77	18.8	30 - 130	30	
Chrysene	ND	99	104	4.9	95	77	20.9	30 - 130	30	
Dibenz(a,h)anthracene	ND	97	99	2.0	94	75	22.5	30 - 130	30	
Fluoranthene	ND	116	117	0.9	114	100	13.1	30 - 130	30	
Fluorene	ND	95	102	7.1	93	77	18.8	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	98	100	2.0	94	75	22.5	30 - 130	30	
Naphthalene	ND	87	88	1.1	84	69	19.6	30 - 130	30	
Phenanthrene	ND	97	101	4.0	97	78	21.7	30 - 130	30	
Pyrene	ND	118	120	1.7	120	106	12.4	30 - 130	30	
% 2-Fluorobiphenyl	86	86	89	3.4	83	65	24.3	30 - 130	30	
% Nitrobenzene-d5	77	83	84	1.2	79	60	27.3	30 - 130	30	
% Terphenyl-d14	126	118	116	1.7	116	97	17.8	30 - 130	30	

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 296750, QC Sample No: BH61519 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

Chlorinated Herbicides - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2,4,5-T	ND	53	58	9.0	57	68	17.6	40 - 140	30	
2,4,5-TP (Silvex)	ND	60	62	3.3	62	61	1.6	40 - 140	30	
2,4-D	ND	73	81	10.4	116	75	42.9	40 - 140	30	r
2,4-DB	ND	46	48	4.3	60	85	34.5	40 - 140	30	r
Dalapon	ND	60	60	0.0	87	100	13.9	40 - 140	30	
Dicamba	ND	66	66	0.0	65	69	6.0	40 - 140	30	
Dichloroprop	ND	56	59	5.2	63	90	35.3	40 - 140	30	r
Dinoseb	ND	62	63	1.6	56	54	3.6	40 - 140	30	
% DCAA (Surrogate Rec)	64	59	58	1.7	58	122	71.1	30 - 150	30	r

QA/QC Batch 296733, QC Sample No: BH61525 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

Pesticides - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
4,4' -DDD	ND	94	91	3.2	95	91	4.3	40 - 140	30	
4,4' -DDE	ND	93	92	1.1	91	87	4.5	40 - 140	30	
4,4' -DDT	ND	89	87	2.3	90	85	5.7	40 - 140	30	
a-BHC	ND	98	95	3.1	98	98	0.0	40 - 140	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
a-Chlordane	ND	97	95	2.1	93	89	4.4	40 - 140	30	
Alachlor	ND	NA	NA	NC	NA	NA	NC	40 - 140	30	
Aldrin	ND	98	95	3.1	96	92	4.3	40 - 140	30	
b-BHC	ND	94	92	2.2	93	91	2.2	40 - 140	30	
Chlordane	ND	102	100	2.0	94	91	3.2	40 - 140	30	
d-BHC	ND	91	85	6.8	89	86	3.4	40 - 140	30	
Dieldrin	ND	94	92	2.2	90	86	4.5	40 - 140	30	
Endosulfan I	ND	93	93	0.0	91	89	2.2	40 - 140	30	
Endosulfan II	ND	72	76	5.4	88	85	3.5	40 - 140	30	
Endosulfan sulfate	ND	64	55	15.1	73	69	5.6	40 - 140	30	
Endrin	ND	113	110	2.7	115	108	6.3	40 - 140	30	
Endrin aldehyde	ND	65	62	4.7	89	88	1.1	40 - 140	30	
Endrin ketone	ND	75	69	8.3	81	77	5.1	40 - 140	30	
g-BHC	ND	96	93	3.2	95	95	0.0	40 - 140	30	
g-Chlordane	ND	102	100	2.0	94	91	3.2	40 - 140	30	
Heptachlor	ND	97	94	3.1	95	93	2.1	40 - 140	30	
Heptachlor epoxide	ND	95	93	2.1	92	89	3.3	40 - 140	30	
Methoxychlor	ND	86	83	3.6	85	86	1.2	40 - 140	30	
Toxaphene	ND	NA	NA	NC	NA	NA	NC	40 - 140	30	
% DCBP	92	93	91	2.2	88	84	4.7	30 - 150	30	
% TCMX	91	96	93	3.2	93	91	2.2	30 - 150	30	

QA/QC Batch 296734, QC Sample No: BH61525 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

TPH by GC (Extractable Products) - Soil

Ext. Petroleum HC	ND	71	68	4.3	87	88	1.1	60 - 120	30	
% n-Pentacosane	87	88	84	4.7	72	75	4.1	50 - 150	30	

QA/QC Batch 296818, QC Sample No: BH61611 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528 (50, 1X) , BH61529, BH61530 (50X) , BH61531)

Volatiles - Soil

1,1,1,2-Tetrachloroethane	ND	100	100	0.0	96	99	3.1	70 - 130	30	
1,1,1-Trichloroethane	ND	96	101	5.1	99	101	2.0	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	102	108	5.7	96	100	4.1	70 - 130	30	
1,1,2-Trichloroethane	ND	97	100	3.0	95	100	5.1	70 - 130	30	
1,1-Dichloroethane	ND	92	96	4.3	96	97	1.0	70 - 130	30	
1,1-Dichloroethene	ND	97	102	5.0	63	61	3.2	70 - 130	30	m
1,1-Dichloropropene	ND	95	96	1.0	101	105	3.9	70 - 130	30	
1,2,3-Trichlorobenzene	ND	99	102	3.0	87	94	7.7	70 - 130	30	
1,2,3-Trichloropropane	ND	101	102	1.0	93	98	5.2	70 - 130	30	
1,2,4-Trichlorobenzene	ND	103	106	2.9	93	99	6.3	70 - 130	30	
1,2,4-Trimethylbenzene	ND	94	100	6.2	98	100	2.0	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	100	102	2.0	88	93	5.5	70 - 130	30	
1,2-Dibromoethane	ND	100	99	1.0	95	101	6.1	70 - 130	30	
1,2-Dichlorobenzene	ND	96	101	5.1	96	100	4.1	70 - 130	30	
1,2-Dichloroethane	ND	98	98	0.0	94	97	3.1	70 - 130	30	
1,2-Dichloropropane	ND	95	98	3.1	98	101	3.0	70 - 130	30	
1,3,5-Trimethylbenzene	ND	99	98	1.0	100	103	3.0	70 - 130	30	
1,3-Dichlorobenzene	ND	98	98	0.0	98	101	3.0	70 - 130	30	
1,3-Dichloropropane	ND	98	100	2.0	95	100	5.1	70 - 130	30	
1,4-Dichlorobenzene	ND	97	103	6.0	97	100	3.0	70 - 130	30	
2,2-Dichloropropane	ND	95	100	5.1	95	98	3.1	70 - 130	30	
2-Chlorotoluene	ND	96	96	0.0	98	100	2.0	70 - 130	30	
2-Hexanone	ND	91	89	2.2	85	90	5.7	70 - 130	30	
2-Isopropyltoluene	ND	99	104	4.9	100	102	2.0	70 - 130	30	

QA/QC Data

SDG I.D.: GBH61523

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
4-Chlorotoluene	ND	96	96	0.0	98	100	2.0	70 - 130	30	
4-Methyl-2-pentanone	ND	96	94	2.1	95	100	5.1	70 - 130	30	
Acetone	ND	99	92	7.3	57	59	3.4	70 - 130	30	m
Acrylonitrile	ND	95	97	2.1	91	98	7.4	70 - 130	30	
Benzene	ND	94	97	3.1	98	103	5.0	70 - 130	30	
Bromobenzene	ND	98	98	0.0	98	101	3.0	70 - 130	30	
Bromochloromethane	ND	97	102	5.0	97	99	2.0	70 - 130	30	
Bromodichloromethane	ND	101	101	0.0	97	102	5.0	70 - 130	30	
Bromoform	ND	109	105	3.7	99	103	4.0	70 - 130	30	
Bromomethane	ND	91	97	6.4	53	55	3.7	70 - 130	30	m
Carbon Disulfide	ND	96	100	4.1	67	65	3.0	70 - 130	30	m
Carbon tetrachloride	ND	98	98	0.0	99	100	1.0	70 - 130	30	
Chlorobenzene	ND	98	98	0.0	98	100	2.0	70 - 130	30	
Chloroethane	ND	87	93	6.7	32	32	0.0	70 - 130	30	m
Chloroform	ND	95	99	4.1	97	96	1.0	70 - 130	30	
Chloromethane	ND	84	88	4.7	92	93	1.1	70 - 130	30	
cis-1,2-Dichloroethene	ND	92	96	4.3	96	96	0.0	70 - 130	30	
cis-1,3-Dichloropropene	ND	102	102	0.0	98	102	4.0	70 - 130	30	
Dibromochloromethane	ND	104	106	1.9	98	100	2.0	70 - 130	30	
Dibromomethane	ND	98	97	1.0	95	99	4.1	70 - 130	30	
Dichlorodifluoromethane	ND	100	102	2.0	100	104	3.9	70 - 130	30	
Ethylbenzene	ND	96	100	4.1	99	101	2.0	70 - 130	30	
Hexachlorobutadiene	ND	104	106	1.9	99	103	4.0	70 - 130	30	
Isopropylbenzene	ND	96	103	7.0	101	103	2.0	70 - 130	30	
m&p-Xylene	ND	96	98	2.1	98	101	3.0	70 - 130	30	
Methyl ethyl ketone	ND	93	95	2.1	87	91	4.5	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	98	95	3.1	87	89	2.3	70 - 130	30	
Methylene chloride	ND	91	95	4.3	83	83	0.0	70 - 130	30	
Naphthalene	ND	101	105	3.9	89	96	7.6	70 - 130	30	
n-Butylbenzene	ND	99	100	1.0	100	103	3.0	70 - 130	30	
n-Propylbenzene	ND	92	91	1.1	101	103	2.0	70 - 130	30	
o-Xylene	ND	98	97	1.0	100	102	2.0	70 - 130	30	
p-Isopropyltoluene	ND	99	94	5.2	101	103	2.0	70 - 130	30	
sec-Butylbenzene	ND	99	111	11.4	101	103	2.0	70 - 130	30	
Styrene	ND	104	98	5.9	103	106	2.9	70 - 130	30	
tert-Butylbenzene	ND	96	110	13.6	100	103	3.0	70 - 130	30	
Tetrachloroethene	ND	98	95	3.1	100	102	2.0	70 - 130	30	
Tetrahydrofuran (THF)	ND	95	96	1.0	92	97	5.3	70 - 130	30	
Toluene	ND	95	96	1.0	99	105	5.9	70 - 130	30	
trans-1,2-Dichloroethene	ND	96	101	5.1	92	90	2.2	70 - 130	30	
trans-1,3-Dichloropropene	ND	105	104	1.0	98	102	4.0	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	105	109	3.7	98	103	5.0	70 - 130	30	
Trichloroethene	ND	96	98	2.1	99	106	6.8	70 - 130	30	
Trichlorofluoromethane	ND	99	105	5.9	23	21	9.1	70 - 130	30	m
Trichlorotrifluoroethane	ND	101	102	1.0	67	65	3.0	70 - 130	30	m
Vinyl chloride	ND	87	91	4.5	106	108	1.9	70 - 130	30	
% 1,2-dichlorobenzene-d4	106	104	107	2.8	103	103	0.0	70 - 130	30	
% Bromofluorobenzene	96	102	102	0.0	99	100	1.0	70 - 130	30	
% Dibromofluoromethane	103	102	102	0.0	101	98	3.0	70 - 130	30	
% Toluene-d8	99	100	99	1.0	100	97	3.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Data

SDG I.D.: GBH61523

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296731, QC Sample No: BH61719 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)									
Polychlorinated Biphenyls - Soil									
PCB-1016	ND	84	86	2.4	76	77	1.3	40 - 140	30
PCB-1221	ND							40 - 140	30
PCB-1232	ND							40 - 140	30
PCB-1242	ND							40 - 140	30
PCB-1248	ND							40 - 140	30
PCB-1254	ND							40 - 140	30
PCB-1260	ND	90	94	4.3	85	88	3.5	40 - 140	30
PCB-1262	ND							40 - 140	30
PCB-1268	ND							40 - 140	30
% DCBP (Surrogate Rec)	105	105	102	2.9	85	93	9.0	30 - 150	30
% TCMX (Surrogate Rec)	89	90	94	4.3	75	78	3.9	30 - 150	30
QA/QC Batch 296732, QC Sample No: BH61719 (BH61526, BH61527, BH61528, BH61529)									
Polynuclear Aromatic HC - Soil									
2-Methylnaphthalene	ND	82	79	3.7	70	68	2.9	30 - 130	30
Acenaphthene	ND	78	80	2.5	86	77	11.0	30 - 130	30
Acenaphthylene	ND	77	80	3.8	80	75	6.5	30 - 130	30
Anthracene	ND	81	82	1.2	88	80	9.5	30 - 130	30
Benz(a)anthracene	ND	94	91	3.2	84	78	7.4	30 - 130	30
Benzo(a)pyrene	ND	83	84	1.2	74	71	4.1	30 - 130	30
Benzo(b)fluoranthene	ND	81	87	7.1	77	74	4.0	30 - 130	30
Benzo(ghi)perylene	ND	83	86	3.6	73	71	2.8	30 - 130	30
Benzo(k)fluoranthene	ND	81	75	7.7	77	74	4.0	30 - 130	30
Chrysene	ND	101	96	5.1	88	83	5.8	30 - 130	30
Dibenz(a,h)anthracene	ND	79	79	0.0	78	74	5.3	30 - 130	30
Fluoranthene	ND	79	82	3.7	87	76	13.5	30 - 130	30
Fluorene	ND	69	74	7.0	89	80	10.7	30 - 130	30
Indeno(1,2,3-cd)pyrene	ND	83	82	1.2	75	73	2.7	30 - 130	30
Naphthalene	ND	78	80	2.5	65	68	4.5	30 - 130	30
Phenanthrene	ND	82	82	0.0	88	79	10.8	30 - 130	30
Pyrene	ND	79	82	3.7	85	74	13.8	30 - 130	30
% 2-Fluorobiphenyl	84	77	78	1.3	77	71	8.1	30 - 130	30
% Nitrobenzene-d5	75	76	74	2.7	63	68	7.6	30 - 130	30
% Terphenyl-d14	121	81	84	3.6	83	72	14.2	30 - 130	30

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

m = This parameter is outside laboratory ms/msd specified recovery limits.
r = This parameter is outside laboratory rpd specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 15, 2015

Criteria: None

State: CT

Sample Criteria Exceedences Report

GBH61523 - REDTECH

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** Red Technologies, LLC

Project Location: CENTER ST., BRIDGE **Project Number:**

Laboratory Sample ID(s): BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529, BH61530, BH61531

Sampling Date(s): 1/7/2015

RCP Methods Used:

☑ 1311/1312 ☑ 6010 ☐ 7000 ☐ 7196 ☑ 7470/7471 ☑ 8081 ☐ EPH ☐ TO15

☑ 8082 ☑ 8151 ☑ 8260 ☑ 8270 ☑ ETPH ☐ 9010/9012 ☐ VPH

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved?	☑ Yes ☐ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☐ Yes ☑ No ☐ NA
7.	Are project-specific matrix spikes and laboratory duplicates included in the data set?	☑ Yes ☐ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Ethan Lee

Date: Thursday, January 15, 2015

Printed Name: Ethan Lee

Position: Project Manager

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NY # 11301

RCP Certification Report

January 15, 2015

SDG I.D.: GBH61523

BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529 - The client requested a short list of analytes from the 6010 RCP Metals list. Only the RCRA 8 Metals are reported as requested on the chain of custody.

BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529 - The client requested a short list for 8270 RCP Semivolatile. Only the PAH constituents are reported as requested on the chain-of-custody.

ETPH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-fid1 01/09/15-2 (BH61523, BH61525, BH61526, BH61527)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/9/2015

Instrument: Au-fid1 01/12/15-1 (BH61528)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/12/2015

Instrument: Au-fid84 01/12/15-1 (BH61524, BH61529)

Initial Calibration (FID84 - ETPH_13) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: none

Printed Name Jeff Bucko
Position: Chemist
Date: 1/12/2015

Instrument: Au-xl2 01/09/15-2 (BH61525)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

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As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name	Jeff Bucko
Position:	Chemist
Date:	1/9/2015

QC (Site Specific)

----------- Sample No: BH61525, QA/QC Batch: 296734 -----------

All LCS recoveries were within 60 - 120 with the following exceptions: None.

All LCSD recoveries were within 60 - 120 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

All MS recoveries were within 50 - 150 with the following exceptions: None.

All MSD recoveries were within 50 - 150 with the following exceptions: None.

All MS/MSD RPDs were less than 30% with the following exceptions: None.

Herbicide Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd12 01/12/15-1 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

Initial Calibration ECD12 -N1714AI/BI
The initial calibration RSD for the compound list was less than 20% except for the following compounds: none

Printed Name	Brian B
Position:	Chemist
Date:	1/12/2015

QC (Batch Specific)

----------- Sample No: BH61519, QA/QC Batch: 296750 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

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SDG I.D.: GBH61523

Mercury Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Merlin 01/12/15-1 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/12/2015

Instrument: Merlin 01/13/15-1 (BH61527, BH61528, BH61529)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/13/2015

QC (Batch Specific)

----------- Sample No: BH61519, QA/QC Batch: 296785 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61591, QA/QC Batch: 296789 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

----------- Sample No: BH61843, QA/QC Batch: 296883 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

ICP Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Arcos 01/12/15-1 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/12/2015

Instrument: Arcos 01/13/15-1 (BH61524)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

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SDG I.D.: GBH61523

Printed Name Laura Kinnin
Position: Chemist
Date: 1/13/2015

QC (Batch Specific)

----------- Sample No: BH60360, QA/QC Batch: 296556 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

----------- Sample No: BH61516, QA/QC Batch: 296730 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

PAH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem19 01/09/15-1 (BH61523, BH61525, BH61527, BH61528)

Initial Calibration Verification (CHEM19/BN_0106):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM19/0109_04-BN_0106):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/9/2015

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SDG I.D.: GBH61523

QC (Batch Specific)

----------- Sample No: BH61283, QA/QC Batch: 296633 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61719, QA/QC Batch: 296732 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd3 01/12/15-1 (BH61524, BH61526, BH61527, BH61528)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC106AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC106BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/12/2015

Instrument: Au-ecd48 01/12/15-1 (BH61523)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC107AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC107BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/12/2015

Instrument: Au-ecd5 01/12/15-1 (BH61529)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC106AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC106BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/12/2015

Instrument: Au-ecd8 01/12/15-1 (BH61525)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC107AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC107BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/12/2015

RCP Certification Report

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SDG I.D.: GBH61523

QC (Batch Specific)

----------- Sample No: BH61719, QA/QC Batch: 296731 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

PEST Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd13 01/12/15-1 (BH61524, BH61528)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.The initial calibration (PS1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Carol Eddy
Position: Chemist
Date: 1/12/2015

Instrument: Au-ecd35 01/13/15-1 (BH61524, BH61528)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.

The continuing calibration standards were within acceptance criteria except for the following compounds: NoneThe initial calibration (PS1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:
113A019 - Endrin aldehyde (-28%)
113A038 - Methoxychlor (-16%)
A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.

Printed Name Carol Eddy
Position: Chemist
Date: 1/13/2015

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SDG I.D.: GBH61523

Instrument: Au-ecd4 01/12/15-1 (BH61523, BH61525, BH61526, BH61527, BH61528, BH61529)

8081 Narration:

Endrin and DDT breakdown was evaluated and is below 15%.

The initial calibration RSD for the compound list was less than 20% except for the following compounds: None

The continuing calibration standards were within acceptance criteria except for the following compounds: NoneThe initial calibration (PS1222AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1222BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:
112A019 - Endrin (16%)
112A031 - Endrin Aldehyde (-17%)
112A039 - Endrin (17%)
A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.

Printed Name Carol Eddy
Position: Chemist
Date: 1/12/2015

QC (Site Specific)

----------- Sample No: BH61525, QA/QC Batch: 296733 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

All MS recoveries were within 30 - 150 with the following exceptions: None.

All MSD recoveries were within 30 - 150 with the following exceptions: None.

All MS/MSD RPDs were less than 30% with the following exceptions: None.

SVOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem05 01/12/15-1 (BH61524, BH61529)

Initial Calibration Verification (CHEM05/SV_0106):
92% of target compounds met criteria.
The following compounds had %RSDs >20%: 2-Nitroaniline (23%), 3-Nitroaniline (48%), Benzidine (29%), Benzoic Acid (22%), Carbazole

(26%), Naphthalene (25%), N-Nitrosodiphenylamine (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM05/0112_02-SV_0106):
99% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: Benzidine (-109%)[30%]
The following compounds did not meet maximum % deviations: Benzidine (-109%)[40%]
The following compounds did not meet recommended response factors: 2-nitrophenol (.059)[0.1], Hexachlorobenzene (.081)[0.1]
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/12/2015

Instrument: Chem06 01/11/15-1 (BH61524, BH61529)

The DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.Initial Calibration Verification (CHEM06/SV_0109):
98% of target compounds met criteria.
The following compounds had %RSDs >20%: 2,4-Dinitrophenol (22%), 4,6-Dinitro-2-methylphenol (25%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM06/0111_02-SV_0109):
98% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: 3,3'-dichlorobenzidine (31%)[30%], Benzidine (36%)[30%]
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: 2-nitrophenol (.075)[0.1], Hexachlorobenzene (.076)[0.1]
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/11/2015

Instrument: Chem12 01/09/15-1 (BH61526)

The DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.Initial Calibration Verification (CHEM12/sv_1224):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Benzidine (38%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM12/0109_04-sv_1224):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: 2-nitrophenol (.064)[0.1], Hexachlorobenzene (.084)[0.1]
The following compounds did not meet minimum response factors: None.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

RCP Certification Report

January 15, 2015

SDG I.D.: GBH61523

Printed Name Damien Drobinski
Position: Chemist
Date: 1/9/2015

QC (Batch Specific)

----------- Sample No: BH61283, QA/QC Batch: 296633 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61719, QA/QC Batch: 296732 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

VOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem03 01/09/15-1 (BH61523, BH61524, BH61525, BH61526, BH61527, BH61528, BH61529, BH61530, BH61531)

Initial Calibration Verification (CHEM03/RCPS_0108):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Trichlorofluoromethane (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM03/0109L02-RCPS_0108):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Jane Li
Position: Chemist
Date: 1/9/2015

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

RCP Certification Report

January 15, 2015

SDG I.D.: GBH61523

QC (Batch Specific)

----------- Sample No: BH61611, QA/QC Batch: 296818 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Temperature Narration

The samples were received at 6C with cooling initiated.
(Note acceptance criteria is above freezing up to 6°C)

Temp 0°C Pg of

PHOENIX Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery:
☐ Fax #: WICIP
☒ Email: JCuscovitch@redTechLLC.com

Customer: RED Technologies LLC
Address: 10 Northwood Dr
Bloomfield CT 06002

Project: Center ST Bridge
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385
Phone #: 860-218-2428
Fax #:

Client Sample - Information - Identification

Sampler's Signature [signature] Date 1-7-15

Matrix Code:
DW=drinking water **WW**=wastewater **S**=soil/solid **O**=other
GW=groundwater **SL**=sludge **A**=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs 8260	PAHs 8270	PCBs 8280	Total RCRA 8 metals 6010 total	SPLP RCRA 8 metals 6010 SPLP	Pesticides 8081B	Herbicides 8151A	Soil VOA [ ] Methanol [ ] S. Bisulfate [ ] H20	GL Soil container (8) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
01523	SB-13 (4-6)	S	1-7-15	0905	X	X	X	X	X	X	X	X	3	2								
01524	SB-14 (2-4)	↓	↓	0915	X	X	X	X	X	X	X	X	3	2								
01525	SB-7 (8-10)	↓	↓	0940	X	X	X	X	X	X	X	X	3	2								
01526	SB-6 (8-10)	↓	↓	1105	X	X	X	X	X	X	X	X	3	2								
01527	SB-10 (8-10)	↓	↓	1245	X	X	X	X	X	X	X	X	3	2								
01528	SB-8 (8-10)	↓	↓	1340	X	X	X	X	X	X	X	X	3	2								
01529	SB-9 (6-8)	↓	↓	1435	X	X	X	X	X	X	X	X	~~3~~ 3	2								
01530	Trip Blank H	TB	—	—		X							3									
01531	TBL																					

Relinquished by:	Accepted by:	Date:	Time:
[signature]	RED Fridge	1-7-15	1700
Red Fridge	[signature]	1-9-15	1201
[signature]	[signature]	1-9-15	14:28

Comments, Special Requirements or Regulations:

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

*** SURCHARGE APPLIES**

CT/RI
☐ RCP Cert.
☐ GW Protect.
☐ GA Mobility
☐ GB Mobility
☐ SW Protect.
☐ Res. Vol.
☐ Ind. Vol.
☐ Res. Criteria
☐ Other

MA
☐ MCP Cert.
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: CT

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ ASP-A
☐ NJ Reduced Deliv. *
☐ NJ Hazsite EDD
☐ Phoenix Std Report
☐ Other

Friday, January 23, 2015

Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Project ID: CENTER ST., BRIDGE
Sample ID#s: BH64208 - BH64216

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	8:10
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64208

Project ID: CENTER ST., BRIDGE
Client ID: SB-4 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	01/19/15	EK	SW6010
Arsenic	3.1	0.7	mg/Kg	01/19/15	EK	SW6010
Barium	93.3	0.35	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.35	0.35	mg/Kg	01/19/15	EK	SW6010
Chromium	22.3	0.35	mg/Kg	01/19/15	EK	SW6010
Mercury	< 0.03	0.03	mg/Kg	01/19/15	RS	SW-7471
Lead	15.5	0.35	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.4	1.4	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	0.010	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.115	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	0.018	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	0.0007	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	0.050	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	86		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/17/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-4 8-10

Phoenix I.D.: BH64208

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	48	ug/Kg	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	48	ug/Kg	01/19/15	BB	SW8151
2,4-D	ND	48	ug/Kg	01/19/15	BB	SW8151
2,4-DB	ND	480	ug/Kg	01/19/15	BB	SW8151
Dalapon	ND	48	ug/Kg	01/19/15	BB	SW8151
Dicamba	ND	97	ug/Kg	01/19/15	BB	SW8151
Dichloroprop	ND	48	ug/Kg	01/19/15	BB	SW8151
Dinoseb	ND	97	ug/Kg	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	78		%	01/19/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	57	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	79		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	84		%	01/17/15	AW	30 - 150 %
% TCMX	91		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.6	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.6	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.6	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.6	ug/Kg	01/17/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	91		%	01/17/15	CE	30 - 150 %
% TCMX	90		%	01/17/15	CE	30 - 150 %

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.1	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	26	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	26	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	31	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: SB-4 8-10

Phoenix I.D.: BH64208

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.1	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	31	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	5.5	5.2	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	107		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	94		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	104		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	95		%	01/17/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	560	270	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	560	270	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	860	270	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	280	270	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Chrysene	610	270	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	1100	270	ug/Kg	01/17/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-4 8-10

Phoenix I.D.: BH64208

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	270	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	590	270	ug/Kg	01/17/15	DD	SW 8270
Pyrene	1000	270	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	77		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	69		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	98		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	8:40
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64209

Project ID: CENTER ST., BRIDGE
Client ID: SB-3/MW-1 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.43	0.43	mg/Kg	01/19/15	EK	SW6010
Arsenic	5.5	0.9	mg/Kg	01/19/15	EK	SW6010
Barium	104	0.43	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.43	0.43	mg/Kg	01/19/15	EK	SW6010
Chromium	26.2	0.43	mg/Kg	01/19/15	EK	SW6010
Mercury	0.23	0.03	mg/Kg	01/19/15	RS	SW-7471
Lead	24.4	0.43	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.7	1.7	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.087	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	0.019	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	0.032	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	81		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/17/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	51	ug/Kg	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	51	ug/Kg	01/19/15	BB	SW8151
2,4-D	ND	51	ug/Kg	01/19/15	BB	SW8151
2,4-DB	ND	510	ug/Kg	01/19/15	BB	SW8151
Dalapon	ND	51	ug/Kg	01/19/15	BB	SW8151
Dicamba	ND	100	ug/Kg	01/19/15	BB	SW8151
Dichloroprop	ND	51	ug/Kg	01/19/15	BB	SW8151
Dinoseb	ND	100	ug/Kg	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	78		%	01/19/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	61	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	74		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	410	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	410	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	97		%	01/17/15	AW	30 - 150 %
% TCMX	106		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	8.2	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	8.2	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	8.2	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	4.1	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	41	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	4.1	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	8.2	ug/Kg	01/17/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.6	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	8.2	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	41	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	160	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	102		%	01/17/15	CE	30 - 150 %
% TCMX	103		%	01/17/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	4.0	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	34	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	34	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	40	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: SB-3/MW-1 8-10

Phoenix I.D.: BH64209

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	4.0	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	40	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	13	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	13	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	13	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	41	6.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	6.7	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	106		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	93		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	101		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	98		%	01/17/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Chrysene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	ND	290	ug/Kg	01/17/15	DD	SW 8270

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	ND	290	ug/Kg	01/17/15	DD	SW 8270
Pyrene	ND	290	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	74		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	61		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	94		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	9:15
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64210

Project ID: CENTER ST., BRIDGE
Client ID: SB-2 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.38	0.38	mg/Kg	01/19/15	EK	SW6010
Arsenic	4.2	0.8	mg/Kg	01/19/15	EK	SW6010
Barium	95.6	0.38	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.38	0.38	mg/Kg	01/19/15	EK	SW6010
Chromium	23.2	0.38	mg/Kg	01/19/15	EK	SW6010
Mercury	< 0.03	0.03	mg/Kg	01/19/15	RS	SW-7471
Lead	10.7	0.38	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.5	1.5	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.047	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	87		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/17/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/19/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/19/15	BB	SW8151
Dicamba	ND	95	ug/Kg	01/19/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/19/15	BB	SW8151
Dinoseb	ND	95	ug/Kg	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	72		%	01/19/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	57	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	78		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	97		%	01/17/15	AW	30 - 150 %
% TCMX	105		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.6	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.6	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.6	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.6	ug/Kg	01/17/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.6	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	101		%	01/17/15	CE	30 - 150 %
% TCMX	102		%	01/17/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.7	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	30	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	30	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	37	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260

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Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.7	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	37	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	12	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	14	6.1	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	6.1	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	107		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	94		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	99		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/17/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270

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Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	76		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	78		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	88		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	9:30
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64211

Project ID: CENTER ST., BRIDGE
Client ID: SB-1 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.40	0.40	mg/Kg	01/19/15	EK	SW6010
Arsenic	7.1	0.8	mg/Kg	01/19/15	EK	SW6010
Barium	143	0.40	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.40	0.40	mg/Kg	01/19/15	EK	SW6010
Chromium	26.9	0.40	mg/Kg	01/19/15	EK	SW6010
Mercury	0.10	0.03	mg/Kg	01/19/15	RS	SW-7471
Lead	9.09	0.40	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.037	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	0.012	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	88		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/17/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/19/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/19/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/19/15	BB	SW8151
Dicamba	ND	94	ug/Kg	01/19/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/19/15	BB	SW8151
Dinoseb	ND	94	ug/Kg	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	68		%	01/19/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	57	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	78		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	370	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	90		%	01/17/15	AW	30 - 150 %
% TCMX	99		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.5	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.7	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	37	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.7	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.5	ug/Kg	01/17/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	37	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	100		%	01/17/15	CE	30 - 150 %
% TCMX	103		%	01/17/15	CE	30 - 150 %

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.4	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	29	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	29	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	34	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: SB-1 8-10

Phoenix I.D.: BH64211

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.4	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	34	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	11	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	19	5.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	107		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	96		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	100		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	98		%	01/17/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-1 8-10

Phoenix I.D.: BH64211

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	79		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	74		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	93		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	10:15
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64212

Project ID: CENTER ST., BRIDGE
Client ID: SB-15/MW-2 6-8

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.42	0.42	mg/Kg	01/19/15	EK	SW6010
Arsenic	6.0	0.8	mg/Kg	01/19/15	EK	SW6010
Barium	146	0.42	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.42	0.42	mg/Kg	01/19/15	EK	SW6010
Chromium	21.4	0.42	mg/Kg	01/19/15	EK	SW6010
Mercury	< 0.03	0.03	mg/Kg	01/21/15	RS	SW-7471
Lead	9.55	0.42	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.7	1.7	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.056	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	84		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/21/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	49	ug/Kg	01/20/15	BB	SW8151
2,4,5-TP (Silvex)	ND	49	ug/Kg	01/20/15	BB	SW8151
2,4-D	ND	49	ug/Kg	01/20/15	BB	SW8151
2,4-DB	ND	490	ug/Kg	01/20/15	BB	SW8151
Dalapon	ND	49	ug/Kg	01/20/15	BB	SW8151
Dicamba	ND	98	ug/Kg	01/20/15	BB	SW8151
Dichloroprop	ND	49	ug/Kg	01/20/15	BB	SW8151
Dinoseb	ND	98	ug/Kg	01/20/15	BB	SW8151
QA/QC Surrogates						
% DCAA	73		%	01/20/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	58	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	76		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	390	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	390	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	112		%	01/17/15	AW	30 - 150 %
% TCMX	112		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.8	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.8	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.8	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.9	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	39	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.9	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.8	ug/Kg	01/17/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-15/MW-2 6-8

Phoenix I.D.: BH64212

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.6	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.8	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	39	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	160	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	117		%	01/17/15	CE	30 - 150 %
% TCMX	109		%	01/17/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.4	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	29	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	29	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	34	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.4	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	34	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	11	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	320	300	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	5.7	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	99		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	87		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	102		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	104		%	01/17/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Chrysene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	ND	280	ug/Kg	01/17/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-15/MW-2 6-8

Phoenix I.D.: BH64212

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	ND	280	ug/Kg	01/17/15	DD	SW 8270
Pyrene	ND	280	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	60		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	48		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	71		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	11:20
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64213

Project ID: CENTER ST., BRIDGE
Client ID: SB-12 6-8

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.36	0.36	mg/Kg	01/19/15	EK	SW6010
Arsenic	2.7	0.7	mg/Kg	01/19/15	EK	SW6010
Barium	69.1	0.36	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.36	0.36	mg/Kg	01/19/15	EK	SW6010
Chromium	17.5	0.36	mg/Kg	01/19/15	EK	SW6010
Mercury	0.18	0.03	mg/Kg	01/21/15	RS	SW-7471
Lead	20.9	0.36	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.4	1.4	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.018	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	88		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/21/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Project ID: CENTER ST., BRIDGE
Client ID: SB-12 6-8

Phoenix I.D.: BH64213

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/20/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/20/15	BB	SW8151
Dicamba	ND	94	ug/Kg	01/20/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/20/15	BB	SW8151
Dinoseb	ND	94	ug/Kg	01/20/15	BB	SW8151
QA/QC Surrogates						
% DCAA	70		%	01/20/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	56	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	72		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	380	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	380	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	96		%	01/17/15	AW	30 - 150 %
% TCMX	102		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.5	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	38	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.8	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.5	ug/Kg	01/17/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-12 6-8

Phoenix I.D.: BH64213

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	38	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	97		%	01/17/15	CE	30 - 150 %
% TCMX	95		%	01/17/15	CE	30 - 150 %

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	2.8	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	24	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	24	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	28	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: SB-12 6-8

Phoenix I.D.: BH64213

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	2.8	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	28	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	9.4	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	9.4	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	9.4	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	4.7	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	107		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	95		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	99		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/17/15	JLI	70 - 130 %
Polynuclear Aromatic HC						
2-Methylnaphthalene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/16/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-12 6-8

Phoenix I.D.: BH64213

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/16/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/16/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	51		%	01/16/15	DD	30 - 130 %
% Nitrobenzene-d5	43		%	01/16/15	DD	30 - 130 %
% Terphenyl-d14	54		%	01/16/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	11:55
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64214

Project ID: CENTER ST., BRIDGE
Client ID: SB-11/MW-3 8-10

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.37	0.37	mg/Kg	01/19/15	EK	SW6010
Arsenic	3.0	0.7	mg/Kg	01/19/15	EK	SW6010
Barium	54.0	0.37	mg/Kg	01/19/15	EK	SW6010
Cadmium	< 0.37	0.37	mg/Kg	01/19/15	EK	SW6010
Chromium	30.2	0.37	mg/Kg	01/19/15	EK	SW6010
Mercury	0.04	0.03	mg/Kg	01/21/15	RS	SW-7471
Lead	10.9	0.37	mg/Kg	01/19/15	EK	SW6010
Selenium	< 1.5	1.5	mg/Kg	01/19/15	EK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Arsenic	0.004	0.004	mg/L	01/19/15	LK	SW6010
SPLP Barium	0.021	0.010	mg/L	01/19/15	LK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/19/15	LK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/19/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/19/15	LK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/19/15	LK	SW6010
SPLP Metals Digestion	Completed			01/17/15	I/I	SW846-3005
Percent Solid	88		%	01/16/15	I	SW846
Soil Extraction for PCB	Completed			01/16/15	BJ	SW3545
Soil Extraction for Pesticide	Completed			01/16/15	BJ	SW3545
Soil Extraction SVOA PAH	Completed			01/16/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/16/15	BC/V	3545
Mercury Digestion	Completed			01/21/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/16/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/17/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/16/15	I	EPA 1312
Total Metals Digest	Completed			01/16/15	CB/T/I	SW846 - 3050
Field Extraction	Completed			01/16/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/20/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/20/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/20/15	BB	SW8151
Dicamba	ND	94	ug/Kg	01/20/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/20/15	BB	SW8151
Dinoseb	ND	94	ug/Kg	01/20/15	BB	SW8151
QA/QC Surrogates						
% DCAA	62		%	01/20/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	56	mg/Kg	01/17/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/17/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	72		%	01/17/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1221	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1232	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1242	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1248	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1254	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1260	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1262	ND	370	ug/Kg	01/17/15	AW	SW 8082
PCB-1268	ND	370	ug/Kg	01/17/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	95		%	01/17/15	AW	30 - 150 %
% TCMX	100		%	01/17/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDE	ND	7.5	ug/Kg	01/17/15	CE	SW8081
4,4' -DDT	ND	7.5	ug/Kg	01/17/15	CE	SW8081
a-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Alachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Aldrin	ND	3.7	ug/Kg	01/17/15	CE	SW8081
b-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Chlordane	ND	37	ug/Kg	01/17/15	CE	SW8081
d-BHC	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Dieldrin	ND	3.7	ug/Kg	01/17/15	CE	SW8081
Endosulfan I	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan II	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endosulfan sulfate	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin aldehyde	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Endrin ketone	ND	7.5	ug/Kg	01/17/15	CE	SW8081

Project ID: CENTER ST., BRIDGE
Client ID: SB-11/MW-3 8-10

Phoenix I.D.: BH64214

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Heptachlor epoxide	ND	7.5	ug/Kg	01/17/15	CE	SW8081
Methoxychlor	ND	37	ug/Kg	01/17/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/17/15	CE	SW8081
QA/QC Surrogates						
% DCBP	110		%	01/17/15	CE	30 - 150 %
% TCMX	108		%	01/17/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.1	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	26	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
4-Chlorotoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	26	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	31	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.1	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	31	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	5.2	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	105		%	01/17/15	JLI	70 - 130 %
% Bromofluorobenzene	96		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	101		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	98		%	01/17/15	JLI	70 - 130 %
Polynuclear Aromatic HC						
2-Methylnaphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Fluoranthene	ND	260	ug/Kg	01/17/15	DD	SW 8270

Project ID: CENTER ST., BRIDGE
Client ID: SB-11/MW-3 8-10

Phoenix I.D.: BH64214

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/17/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	69		%	01/17/15	DD	30 - 130 %
% Nitrobenzene-d5	63		%	01/17/15	DD	30 - 130 %
% Terphenyl-d14	90		%	01/17/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	0:00
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64215

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK HIGH

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Percent Solid	100	1	%	01/16/15		SW846
Field Extraction	Completed			01/16/15		SW5035
Volatiles						
1,1,1,2-Tetrachloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	250	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	250	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	250	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	1300	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	250	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK HIGH

Phoenix I.D.: BH64215

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
4-Chlorotoluene	ND	250	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	1300	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	5000	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	500	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	250	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	250	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	250	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	250	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
cis-1,2-Dichloroethene	ND	250	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	3000	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	250	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	500	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	250	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	250	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	250	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	250	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	500	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	250	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	250	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	250	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	500	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	ND	250	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	250	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	250	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	107		%	01/17/15	JLI	70 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Bromofluorobenzene	97		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	93		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/17/15	JLI	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.
Trip blank included

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 23, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		01/16/15	0:00
Location Code:	REDTECH	Received by:	LB	01/16/15	14:40
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64208
Phoenix ID: BH64216

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Percent Solid	100	1	%	01/16/15		SW846
Field Extraction	Completed			01/16/15		SW5035
Volatiles						
1,1,1,2-Tetrachloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,1,1-Trichloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	3.0	ug/Kg	01/17/15	JLI	SW8260
1,1,2-Trichloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloroethene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,1-Dichloropropene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2,3-Trichloropropane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2-Dibromoethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,2-Dichloropropane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,3-Dichloropropane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
1,4-Dichlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
2,2-Dichloropropane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
2-Chlorotoluene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
2-Hexanone	ND	25	ug/Kg	01/17/15	JLI	SW8260
2-Isopropyltoluene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Phoenix I.D.: BH64216

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
4-Chlorotoluene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
4-Methyl-2-pentanone	ND	25	ug/Kg	01/17/15	JLI	SW8260
Acetone	ND	30	ug/Kg	01/17/15	JLI	SW8260
Acrylonitrile	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Benzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Bromobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Bromochloromethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Bromodichloromethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Bromoform	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Bromomethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Carbon Disulfide	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Carbon tetrachloride	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Chlorobenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Chloroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Chloroform	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Chloromethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
cis-1,2-Dichloroethene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Dibromochloromethane	ND	3.0	ug/Kg	01/17/15	JLI	SW8260
Dibromomethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Dichlorodifluoromethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Ethylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Hexachlorobutadiene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Isopropylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
m&p-Xylene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Methyl Ethyl Ketone	ND	30	ug/Kg	01/17/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Methylene chloride	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Naphthalene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
n-Butylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
n-Propylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
o-Xylene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
p-Isopropyltoluene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
sec-Butylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Styrene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
tert-Butylbenzene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Tetrachloroethene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	10	ug/Kg	01/17/15	JLI	SW8260
Toluene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Total Xylenes	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	10	ug/Kg	01/17/15	JLI	SW8260
Trichloroethene	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Trichlorofluoromethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Trichlorotrifluoroethane	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
Vinyl chloride	ND	5.0	ug/Kg	01/17/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	105		%	01/17/15	JLI	70 - 130 %

Project ID: CENTER ST., BRIDGE
Client ID: TRIP BLANK LOW

Phoenix I.D.: BH64216

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Bromofluorobenzene	96		%	01/17/15	JLI	70 - 130 %
% Dibromofluoromethane	98		%	01/17/15	JLI	70 - 130 %
% Toluene-d8	96		%	01/17/15	JLI	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.
Trip blank included

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 23, 2015

QA/QC Data

SDG I.D.: GBH64208

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 296887, QC Sample No: BH61997 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)													
ICP Metals - SPLP Extraction													
Arsenic	BRL	<0.004	<0.004	NC	104	107	2.8	105	103	1.9	75 - 125	20	
Barium	BRL	0.023	0.023	NC	106	107	0.9	108	105	2.8	75 - 125	20	
Cadmium	BRL	<0.005	<0.005	NC	106	108	1.9	106	104	1.9	75 - 125	20	
Chromium	BRL	<0.010	<0.010	NC	104	105	1.0	104	102	1.9	75 - 125	20	
Lead	BRL	<0.010	<0.010	NC	102	104	1.9	102	100	2.0	75 - 125	20	
Selenium	BRL	<0.020	<0.020	NC	100	103	3.0	102	99.7	2.3	75 - 125	20	
Silver	BRL	<0.010	<0.010	NC	101	101	0.0	101	98.8	2.2	75 - 125	20	
QA/QC Batch 297381, QC Sample No: BH63732 (BH64208)													
Mercury - Water	BRL	<0.0002	<0.0002	NC	103	94.9	8.2	94.9	96.7	1.9	70 - 130	20	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													
QA/QC Batch 297380, QC Sample No: BH64166 (BH64208, BH64209, BH64210, BH64211)													
Mercury - Soil	BRL	2.38	1.77	29.4	105	100	4.9	NC	NC	NC	70 - 130	30	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													
QA/QC Batch 297323, QC Sample No: BH64213 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)													
ICP Metals - Soil													
Arsenic	BRL	2.7	2.86	NC	99.7	99.2	0.5	88.3	88.3	0.0	75 - 125	30	
Barium	BRL	69.1	346	133	113	113	0.0	93.6	103	9.6	75 - 125	30	r
Cadmium	BRL	<0.36	<0.37	NC	86.5	85.2	1.5	86.5	87.3	0.9	75 - 125	30	
Chromium	BRL	17.5	18.7	6.60	106	102	3.8	96.5	94.1	2.5	75 - 125	30	
Lead	BRL	20.9	348	177	88.7	88.2	0.6	84.9	93.6	9.7	75 - 125	30	r
Selenium	BRL	<1.4	<1.5	NC	88.6	88.7	0.1	79.0	78.8	0.3	75 - 125	30	
Silver	BRL	<0.36	<0.37	NC	101	98.9	2.1	93.8	94.1	0.3	75 - 125	30	
QA/QC Batch 297609, QC Sample No: BH64213 (BH64212, BH64213, BH64214)													
Mercury - Soil	BRL	0.18	0.17	5.70	103	106	2.9	93.3	117	22.5	70 - 130	30	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													
QA/QC Batch 297382, QC Sample No: BH64217 (BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)													
Mercury - Water	BRL	<0.0002	<0.0002	NC	104	109	4.7	107	96.1	10.7	70 - 130	20	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													

r = This parameter is outside laboratory rpd specified recovery limits.

PHOENIX

Environmental Laboratories, Inc.

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QA/QC Report

January 23, 2015

QA/QC Data

SDG I.D.: GBH64208

QA/QC Batch 297193, QC Sample No: BH63175 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Chlorinated Herbicides - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
2,4,5-T	ND	66	64	3.1				40 - 140	30
2,4,5-TP (Silvex)	ND	75	72	4.1				40 - 140	30
2,4-D	ND	93	96	3.2				40 - 140	30
2,4-DB	ND	48	47	2.1				40 - 140	30
Dalapon	ND	109	113	3.6				40 - 140	30
Dicamba	ND	81	74	9.0				40 - 140	30
Dichloroprop	ND	72	64	11.8				40 - 140	30
Dinoseb	ND	78	76	2.6				40 - 140	30
% DCAA (Surrogate Rec)	74	71	67	5.8				30 - 150	30

Comment:

The MS/MSD was not reported for this Batch of samples.

QA/QC Batch 297313, QC Sample No: BH64166 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Polychlorinated Biphenyls - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
PCB-1016	ND	102	98	4.0	103	98	5.0	40 - 140	30
PCB-1221	ND							40 - 140	30
PCB-1232	ND							40 - 140	30
PCB-1242	ND							40 - 140	30
PCB-1248	ND							40 - 140	30
PCB-1254	ND							40 - 140	30
PCB-1260	ND	99	96	3.1	98	94	4.2	40 - 140	30
PCB-1262	ND							40 - 140	30
PCB-1268	ND							40 - 140	30
% DCBP (Surrogate Rec)	94	98	98	0.0	92	90	2.2	30 - 150	30
% TCMX (Surrogate Rec)	106	107	105	1.9	101	97	4.0	30 - 150	30

QA/QC Batch 297315, QC Sample No: BH64166 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

TPH by GC (Extractable Products) - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Ext. Petroleum HC	ND	97	73	28.2	97	76	24.3	60 - 120	30
% n-Pentacosane	87	107	82	26.5	108	83	26.2	50 - 150	30

QA/QC Batch 297417, QC Sample No: BH64187 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214, BH64215 (50X) , BH64216)

Volatiles - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1,2-Tetrachloroethane	ND	96	98	2.1	88	90	2.2	70 - 130	30
1,1,1-Trichloroethane	ND	90	90	0.0	83	83	0.0	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	102	102	0.0	85	86	1.2	70 - 130	30
1,1,2-Trichloroethane	ND	91	93	2.2	85	85	0.0	70 - 130	30
1,1-Dichloroethane	ND	90	89	1.1	83	83	0.0	70 - 130	30
1,1-Dichloroethene	ND	90	89	1.1	71	71	0.0	70 - 130	30
1,1-Dichloropropene	ND	93	92	1.1	85	85	0.0	70 - 130	30
1,2,3-Trichlorobenzene	ND	100	101	1.0	86	88	2.3	70 - 130	30
1,2,3-Trichloropropane	ND	97	96	1.0	83	85	2.4	70 - 130	30

QA/QC Data

SDG I.D.: GBH64208

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
1,2,4-Trichlorobenzene	ND	101	101	0.0	85	88	3.5	70 - 130	30	
1,2,4-Trimethylbenzene	ND	95	95	0.0	88	88	0.0	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	101	97	4.0	81	83	2.4	70 - 130	30	
1,2-Dibromoethane	ND	93	94	1.1	84	84	0.0	70 - 130	30	
1,2-Dichlorobenzene	ND	98	99	1.0	91	92	1.1	70 - 130	30	
1,2-Dichloroethane	ND	88	91	3.4	81	82	1.2	70 - 130	30	
1,2-Dichloropropane	ND	92	93	1.1	86	87	1.2	70 - 130	30	
1,3,5-Trimethylbenzene	ND	99	98	1.0	90	91	1.1	70 - 130	30	
1,3-Dichlorobenzene	ND	99	99	0.0	89	91	2.2	70 - 130	30	
1,3-Dichloropropane	ND	93	94	1.1	85	87	2.3	70 - 130	30	
1,4-Dichlorobenzene	ND	97	98	1.0	89	90	1.1	70 - 130	30	
2,2-Dichloropropane	ND	93	93	0.0	83	80	3.7	70 - 130	30	
2-Chlorotoluene	ND	99	99	0.0	90	91	1.1	70 - 130	30	
2-Hexanone	ND	83	83	0.0	74	76	2.7	70 - 130	30	
2-Isopropyltoluene	ND	100	99	1.0	93	94	1.1	70 - 130	30	
4-Chlorotoluene	ND	99	100	1.0	91	91	0.0	70 - 130	30	
4-Methyl-2-pentanone	ND	83	86	3.6	76	77	1.3	70 - 130	30	
Acetone	ND	84	76	10.0	52	49	5.9	70 - 130	30	m
Acrylonitrile	ND	88	90	2.2	75	76	1.3	70 - 130	30	
Benzene	ND	92	92	0.0	85	85	0.0	70 - 130	30	
Bromobenzene	ND	97	96	1.0	86	88	2.3	70 - 130	30	
Bromochloromethane	ND	92	93	1.1	86	85	1.2	70 - 130	30	
Bromodichloromethane	ND	93	95	2.1	85	83	2.4	70 - 130	30	
Bromoform	ND	98	102	4.0	85	85	0.0	70 - 130	30	
Bromomethane	ND	88	91	3.4	55	61	10.3	70 - 130	30	m
Carbon Disulfide	ND	96	95	1.0	67	68	1.5	70 - 130	30	m
Carbon tetrachloride	ND	91	91	0.0	88	83	5.8	70 - 130	30	
Chlorobenzene	ND	94	94	0.0	88	89	1.1	70 - 130	30	
Chloroethane	ND	80	79	1.3	34	34	0.0	70 - 130	30	m
Chloroform	ND	88	90	2.2	81	82	1.2	70 - 130	30	
Chloromethane	ND	88	86	2.3	83	81	2.4	70 - 130	30	
cis-1,2-Dichloroethene	ND	92	93	1.1	81	85	4.8	70 - 130	30	
cis-1,3-Dichloropropene	ND	99	100	1.0	86	87	1.2	70 - 130	30	
Dibromochloromethane	ND	99	101	2.0	88	88	0.0	70 - 130	30	
Dibromomethane	ND	92	94	2.2	86	86	0.0	70 - 130	30	
Dichlorodifluoromethane	ND	80	82	2.5	76	77	1.3	70 - 130	30	
Ethylbenzene	ND	97	98	1.0	89	90	1.1	70 - 130	30	
Hexachlorobutadiene	ND	102	100	2.0	91	91	0.0	70 - 130	30	
Isopropylbenzene	ND	98	98	0.0	92	94	2.2	70 - 130	30	
m&p-Xylene	ND	95	93	2.1	88	88	0.0	70 - 130	30	
Methyl ethyl ketone	ND	80	83	3.7	67	71	5.8	70 - 130	30	m
Methyl t-butyl ether (MTBE)	ND	85	88	3.5	78	78	0.0	70 - 130	30	
Methylene chloride	ND	93	93	0.0	77	75	2.6	70 - 130	30	
Naphthalene	ND	100	101	1.0	76	80	5.1	70 - 130	30	
n-Butylbenzene	ND	100	99	1.0	92	92	0.0	70 - 130	30	
n-Propylbenzene	ND	94	93	1.1	91	91	0.0	70 - 130	30	
o-Xylene	ND	95	94	1.1	89	90	1.1	70 - 130	30	
p-Isopropyltoluene	ND	101	100	1.0	92	93	1.1	70 - 130	30	
sec-Butylbenzene	ND	101	100	1.0	92	93	1.1	70 - 130	30	
Styrene	ND	97	96	1.0	90	91	1.1	70 - 130	30	
tert-Butylbenzene	ND	97	97	0.0	92	93	1.1	70 - 130	30	
Tetrachloroethene	ND	97	95	2.1	88	88	0.0	70 - 130	30	
Tetrahydrofuran (THF)	ND	88	87	1.1	73	74	1.4	70 - 130	30	

QA/QC Data

SDG I.D.: GBH64208

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Toluene	ND	92	92	0.0	86	85	1.2	70 - 130	30	
trans-1,2-Dichloroethene	ND	91	91	0.0	82	81	1.2	70 - 130	30	
trans-1,3-Dichloropropene	ND	99	102	3.0	86	85	1.2	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	108	109	0.9	84	87	3.5	70 - 130	30	
Trichloroethene	ND	93	92	1.1	85	86	1.2	70 - 130	30	
Trichlorofluoromethane	ND	89	88	1.1	25	26	3.9	70 - 130	30	m
Trichlorotrifluoroethane	ND	88	88	0.0	74	75	1.3	70 - 130	30	
Vinyl chloride	ND	85	83	2.4	87	87	0.0	70 - 130	30	
% 1,2-dichlorobenzene-d4	105	106	105	0.9	106	107	0.9	70 - 130	30	
% Bromofluorobenzene	96	93	93	0.0	91	91	0.0	70 - 130	30	
% Dibromofluoromethane	102	100	100	0.0	101	98	3.0	70 - 130	30	
% Toluene-d8	97	100	101	1.0	101	100	1.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 297428, QC Sample No: BH64208 (BH64208 (50X) , BH64209 (50X) , BH64210 (50X) , BH64211 (83X) , BH64212 (50X))

Volatiles - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Trichloroethene	ND	92	93	1.1	91	87	4.5	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 297326, QC Sample No: BH64213 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Polynuclear Aromatic HC - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2-Methylnaphthalene	ND	62	80	25.4	82	81	1.2	30 - 130	30	
Acenaphthene	ND	60	77	24.8	78	79	1.3	30 - 130	30	
Acenaphthylene	ND	59	77	26.5	79	79	0.0	30 - 130	30	
Anthracene	ND	62	81	26.6	80	82	2.5	30 - 130	30	
Benz(a)anthracene	ND	61	88	36.2	92	87	5.6	30 - 130	30	r
Benzo(a)pyrene	ND	61	84	31.7	79	78	1.3	30 - 130	30	r
Benzo(b)fluoranthene	ND	59	92	43.7	84	80	4.9	30 - 130	30	r
Benzo(ghi)perylene	ND	65	76	15.6	83	76	8.8	30 - 130	30	
Benzo(k)fluoranthene	ND	63	76	18.7	77	79	2.6	30 - 130	30	
Chrysene	ND	61	87	35.1	91	84	8.0	30 - 130	30	r
Dibenz(a,h)anthracene	ND	64	74	14.5	80	77	3.8	30 - 130	30	
Fluoranthene	ND	61	79	25.7	76	77	1.3	30 - 130	30	
Fluorene	ND	57	69	19.0	71	72	1.4	30 - 130	30	
Indeno(1,2,3-cd)pyrene	ND	64	75	15.8	82	78	5.0	30 - 130	30	
Naphthalene	ND	64	80	22.2	82	82	0.0	30 - 130	30	
Phenanthrene	ND	63	81	25.0	76	79	3.9	30 - 130	30	
Pyrene	ND	61	79	25.7	75	78	3.9	30 - 130	30	
% 2-Fluorobiphenyl	76	57	77	29.9	77	78	1.3	30 - 130	30	
% Nitrobenzene-d5	68	52	71	30.9	77	75	2.6	30 - 130	30	r
% Terphenyl-d14	87	63	82	26.2	82	83	1.2	30 - 130	30	

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 297328, QC Sample No: BH64323 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Pesticides - Soil

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
4,4' -DDD	ND	115	124	7.5	122	125	2.4	40 - 140	30	
4,4' -DDE	ND	112	121	7.7	119	122	2.5	40 - 140	30	
4,4' -DDT	ND	91	100	9.4	99	102	3.0	40 - 140	30	
a-BHC	ND	106	116	9.0	113	112	0.9	40 - 140	30	

QA/QC Data

SDG I.D.: GBH64208

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
a-Chlordane	ND	97	106	8.9	106	106	0.0	40 - 140	30
Alachlor	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
Aldrin	ND	103	113	9.3	110	109	0.9	40 - 140	30
b-BHC	ND	100	110	9.5	108	110	1.8	40 - 140	30
Chlordane	ND	101	110	8.5	108	112	3.6	40 - 140	30
d-BHC	ND	93	101	8.2	100	104	3.9	40 - 140	30
Dieldrin	ND	102	110	7.5	108	109	0.9	40 - 140	30
Endosulfan I	ND	103	112	8.4	110	111	0.9	40 - 140	30
Endosulfan II	ND	92	105	13.2	109	110	0.9	40 - 140	30
Endosulfan sulfate	ND	71	80	11.9	80	80	0.0	40 - 140	30
Endrin	ND	90	100	10.5	100	103	3.0	40 - 140	30
Endrin aldehyde	ND	75	89	17.1	91	94	3.2	40 - 140	30
Endrin ketone	ND	92	100	8.3	99	100	1.0	40 - 140	30
g-BHC	ND	100	109	8.6	108	107	0.9	40 - 140	30
g-Chlordane	ND	101	110	8.5	108	112	3.6	40 - 140	30
Heptachlor	ND	96	107	10.8	104	103	1.0	40 - 140	30
Heptachlor epoxide	ND	100	109	8.6	108	110	1.8	40 - 140	30
Methoxychlor	ND	91	98	7.4	96	99	3.1	40 - 140	30
Toxaphene	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
% DCBP	111	108	117	8.0	104	107	2.8	30 - 150	30
% TCMX	107	103	113	9.3	104	107	2.8	30 - 150	30

m = This parameter is outside laboratory ms/msd specified recovery limits.
r = This parameter is outside laboratory rpd specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 23, 2015

Sample Criteria Exceedences Report

GBH64208 - REDTECH

Criteria: None

State: CT

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** Red Technologies, LLC

Project Location: CENTER ST., BRIDGE **Project Number:**

Laboratory Sample ID(s): BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214, BH64215, BH64216

Sampling Date(s): 1/16/2015

RCP Methods Used:

☑ 1311/1312	☑ 6010	☐ 7000	☐ 7196	☑ 7470/7471	☑ 8081	☐ EPH	☐ TO15
☑ 8082	☑ 8151	☑ 8260	☑ 8270	☑ ETPH	☐ 9010/9012	☐ VPH	

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents acheived? See Sections: ICP Narration, PAH Narration.	☐ Yes ☑ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☐ Yes ☑ No ☐ NA
7.	Are project-specific matrix spikes and laboratory duplicates included in the data set?	☑ Yes ☐ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Ethan Lee

Date: Friday, January 23, 2015

Printed Name: Ethan Lee

Position: Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

Metals Analysis:
The client requested a shorter list of elements than the 6010 RCP list. Only the RCRA 8 Metals are reported as requested on the chain of custody.

8270 Semi-volatile Organics:
The client requested a short list for 8270 RCP Semivolatile. Only the PAH constituents are reported as requested on the chain-of-custody.

ETPH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Aufid-d1 01/16/15-2 (BH64208, BH64209, BH64210, BH64211)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/16/2015

Instrument: Aufid-d1 01/17/15-2 (BH64212, BH64213, BH64214)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/17/2015

QC (Batch Specific)

----------- Sample No: BH64166, QA/QC Batch: 297315 -----------

All LCS recoveries were within 60 - 120 with the following exceptions: None.

All LCSD recoveries were within 60 - 120 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Herbicide Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

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NY # 11301

RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

Instrument: Au-ecd12 01/19/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Initial Calibration ECD12 -HRB107AI/BI
The initial calibration RSD for the compound list was less than 20% except for the following compounds: none

Printed Name Brian B
Position: Chemist
Date: 1/19/2015

QC Comments: QC Batch 297193 01/15/15 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

The MS/MSD was not reported for this Batch of samples.

QC (Batch Specific)

----------- Sample No: BH63175, QA/QC Batch: 297193 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Mercury Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Merlin 01/19/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/19/2015

Instrument: Merlin 01/21/15-1 (BH64212, BH64213, BH64214)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and

no further action is taken.

Printed Name	Rick Schweitzer
Position:	Chemist
Date:	1/21/2015

QC (Site Specific)

----------- Sample No: BH64213, QA/QC Batch: 297609 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

All MS recoveries were within 75 - 125 with the following exceptions: None.

All MSD recoveries were within 75 - 125 with the following exceptions: None.

All MS/MSD RPDs were less than 30% with the following exceptions: None.

QC (Batch Specific)

----------- Sample No: BH63732, QA/QC Batch: 297381 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

----------- Sample No: BH64166, QA/QC Batch: 297380 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH64217, QA/QC Batch: 297382 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

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NY # 11301

RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

ICP Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? No.

QC Batch 297323 (Samples: BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214) ----

The Laboratory Duplicate RPD for one or more analytes exceeds the method criteria, therefore there may be variability in the reported result. (Barium, Lead)

Instrument: Arcos 01/19/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/19/2015

QC (Site Specific)

----------- Sample No: BH64213, QA/QC Batch: 297323 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

All MS recoveries were within 75 - 125 with the following exceptions: None.

All MSD recoveries were within 75 - 125 with the following exceptions: None.

All MS/MSD RPDs were less than 30% with the following exceptions: None.

QC (Batch Specific)

----------- Sample No: BH61997, QA/QC Batch: 296887 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

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RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

PAH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? No.

QC Batch 297326 (Samples: BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214): -----

The LCS/LCSD RPD exceeds the method criteria for one or more analytes, therefore there may be variability in the reported result. (Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% Nitrobenzene-d5)

Instrument: Chem05 01/16/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

Initial Calibration Verification (CHEM05/BN_0106):
95% of target compounds met criteria.
The following compounds had %RSDs >20%: Naphthalene (25%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM05/0116_04-BN_0106):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/16/2015

QC (Site Specific)

----------- Sample No: BH64213, QA/QC Batch: 297326 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: % Nitrobenzene-d5(30.9%), Benz(a)anthracene(36.2%), Benzo(a)pyrene(31.7%), Benzo(b)fluoranthene(43.7%), Chrysene(35.1%)

All MS recoveries were within 30 - 130 with the following exceptions: None.

All MSD recoveries were within 30 - 130 with the following exceptions: None.

All MS/MSD RPDs were less than 30% with the following exceptions: None.

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RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd48 01/17/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC107AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC107BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/17/2015

QC (Batch Specific)

----------- Sample No: BH64166, QA/QC Batch: 297313 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

PEST Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd35 01/17/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.

The continuing calibration standards were within acceptance criteria except for the following compounds: NoneThe initial calibration (PS1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

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NY # 11301

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January 23, 2015

SDG I.D.: GBH64208

Printed Name Carol Eddy
Position: Chemist
Date: 1/17/2015

QC (Batch Specific)

----------- Sample No: BH64323, QA/QC Batch: 297328 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

VOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem15 01/16/15-2 (BH64208, BH64209, BH64210, BH64211, BH64212, BH64213, BH64214, BH64215, BH64216)

Initial Calibration Verification (CHEM15/voa5g_0108):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Acetone (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM15/0116B38-voa5g_0108):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Jane Li
Position: Chemist
Date: 1/16/2015

Instrument: Chem15 01/17/15-1 (BH64208, BH64209, BH64210, BH64211, BH64212)

Initial Calibration Verification (CHEM15/voa5g_0108):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Acetone (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM15/0117B03-voa5g_0108):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.

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RCP Certification Report

January 23, 2015

SDG I.D.: GBH64208

The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name	Jane Li
Position:	Chemist
Date:	1/17/2015

QC (Batch Specific)

----------- Sample No: BH64187, QA/QC Batch: 297417 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH64208, QA/QC Batch: 297428 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Temperature Narration

The samples were received at 4C with cooling initiated.
(Note acceptance criteria is above freezing up to 6°C)

Cooler: Yes [X] No [ ]
Coolant: IPK [ ] ICE [X] No [ ]

CHAIN OF CUSTODY RECORD

PHOENIX
Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 4 °C Pg of

Contact Options:
[ ] Fax:
[ ] Phone: 860-218-2428
[X] Email: JCuscovitch@redtechllc.com

Customer: RED Technologies LLC
Address: 10 Northwood Dr
Bloomfield CT 06002

Project: Center St Bridge
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 1-16-15

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs 8260	PAHs 8270	PCBs 8082	Total RCRA 8 metals (6010 Total)	SPLP RCRA 8 metals (6010 SPLP)	Pesticides (8081B)	Herbicides (8151A)			Soil VOA Vials ( ) methanol ( ) H2O	GL Soil container (4) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
64208	SB-4 (8-10)	S	1-16-15	0810	X	X	X	X	X	X	X	X			3	2								
64209	SB-3/MW-1 (8-10)	↓	↓	0840	X	X	X	X	X	X	X	X			3	2								
64210	SB-2 (8-10)	↓	↓	0915	X	X	X	X	X	X	X	X			3	2								
64211	SB-1 (8-10)	↓	↓	0930	X	X	X	X	X	X	X	X			3	2								
64212	SB-15/MW-2 (6-8)	↓	↓	1015	X	X	X	X	X	X	X	X			3	2								
64213	SB-12 (6-8)	↓	↓	1120	X	X	X	X	X	X	X	X			3	2								
64214	SB-11/MW-3 (8-10)	↓	↓	1155	X	X	X	X	X	X	X	X			3	2								
64215	Trip Blank H	TB	—	—		X									3	~~2~~								
64216	TB-L															3H								

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	1/16/15	14:40

Comments, Special Requirements or Regulations:

Turnaround:
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[X] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] Direct Exposure (Residential)
[ ] GW
[ ] Other

CT
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1
[ ] GW-2
[ ] GW-3
[ ] S-1
[ ] S-2
[ ] S-3
[ ] MWRA eSMART
[ ] Other

Data Format
[X] Excel
[X] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other

* SURCHARGE APPLIES

State where samples were collected: CT

Thursday, January 29, 2015

Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Project ID: CENTER ST BRIDGE
Sample ID#s: BH61997 - BH62003, BH63051 - BH63052

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
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Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SEDIMENT	Collected by:	JC	01/09/15	8:25
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH61997

Project ID: CENTER ST BRIDGE
Client ID: SED-1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.37	0.37	mg/Kg	01/13/15	LK	SW6010
Arsenic	1.3	0.7	mg/Kg	01/13/15	LK	SW6010
Barium	143	0.37	mg/Kg	01/13/15	LK	SW6010
Cadmium	< 0.37	0.37	mg/Kg	01/13/15	LK	SW6010
Chromium	20.3	0.37	mg/Kg	01/13/15	LK	SW6010
Mercury	< 0.08	0.08	mg/kg	01/14/15	RS	SW-7471
Lead	14.8	0.37	mg/Kg	01/13/15	LK	SW6010
Selenium	< 1.9	1.9	mg/Kg	01/13/15	LK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/13/15	EK	SW6010
SPLP Barium	0.023	0.010	mg/L	01/13/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/13/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/13/15	RS	SW7470
SPLP Lead	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/13/15	EK	SW6010
SPLP Metals Digestion	Completed			01/13/15	I/I	SW846-3005
Percent Solid	88		%	01/12/15	I	SW846
Soil Extraction for PCB	Completed			01/12/15	BC/H	SW3545
Soil Extraction for Pesticide	Completed			01/12/15	BC	SW3545
Soil Extraction SVOA PAH	Completed			01/12/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/12/15	BC/V	3545
Mercury Digestion	Completed			01/14/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/13/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/13/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/12/15	I	EPA 1312
Total Metals Digest	Completed			01/12/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/09/15		SW5035

Project ID: CENTER ST BRIDGE
Client ID: SED-1

Phoenix I.D.: BH61997

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	47	ug/Kg	01/14/15	BB	SW8151
2,4,5-TP (Silvex)	ND	47	ug/Kg	01/14/15	BB	SW8151
2,4-D	ND	47	ug/Kg	01/14/15	BB	SW8151
2,4-DB	ND	470	ug/Kg	01/14/15	BB	SW8151
Dalapon	ND	47	ug/Kg	01/14/15	BB	SW8151
Dicamba	ND	94	ug/Kg	01/14/15	BB	SW8151
Dichloroprop	ND	47	ug/Kg	01/14/15	BB	SW8151
Dinoseb	ND	94	ug/Kg	01/14/15	BB	SW8151
QA/QC Surrogates						
% DCAA	55		%	01/14/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	110	56	mg/Kg	01/14/15	JRB	CT ETPH/8015
Identification	**		mg/Kg	01/14/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	85		%	01/14/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1221	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1232	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1242	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1248	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1254	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1260	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1262	ND	370	ug/Kg	01/13/15	AW	SW 8082
PCB-1268	ND	370	ug/Kg	01/13/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	124		%	01/13/15	AW	30 - 150 %
% TCMX	111		%	01/13/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.4	ug/Kg	01/13/15	CE	SW8081
4,4' -DDE	ND	7.4	ug/Kg	01/13/15	CE	SW8081
4,4' -DDT	ND	7.4	ug/Kg	01/13/15	CE	SW8081
a-BHC	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Alachlor	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Aldrin	ND	3.7	ug/Kg	01/13/15	CE	SW8081
b-BHC	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Chlordane	ND	37	ug/Kg	01/13/15	CE	SW8081
d-BHC	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Dieldrin	ND	3.7	ug/Kg	01/13/15	CE	SW8081
Endosulfan I	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Endosulfan II	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Endosulfan sulfate	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Endrin	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Endrin aldehyde	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Endrin ketone	ND	7.4	ug/Kg	01/13/15	CE	SW8081

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.5	ug/Kg	01/13/15	CE	SW8081
Heptachlor	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Heptachlor epoxide	ND	7.4	ug/Kg	01/13/15	CE	SW8081
Methoxychlor	ND	37	ug/Kg	01/13/15	CE	SW8081
Toxaphene	ND	150	ug/Kg	01/13/15	CE	SW8081
QA/QC Surrogates						
% DCBP	102		%	01/13/15	CE	30 - 150 %
% TCMX	107		%	01/13/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,1,1-Trichloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	4.0	ug/Kg	01/12/15	JLI	SW8260
1,1,2-Trichloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloropropene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichloropropane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromoethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloropropane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichloropropane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
1,4-Dichlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
2,2-Dichloropropane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
2-Chlorotoluene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
2-Hexanone	ND	34	ug/Kg	01/12/15	JLI	SW8260
2-Isopropyltoluene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
4-Chlorotoluene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
4-Methyl-2-pentanone	ND	34	ug/Kg	01/12/15	JLI	SW8260
Acetone	ND	40	ug/Kg	01/12/15	JLI	SW8260
Acrylonitrile	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Benzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Bromobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Bromochloromethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Bromodichloromethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Bromoform	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Bromomethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Carbon Disulfide	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Carbon tetrachloride	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Chlorobenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Chloroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Chloroform	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Chloromethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Dibromochloromethane	ND	4.0	ug/Kg	01/12/15	JLI	SW8260
Dibromomethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Dichlorodifluoromethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Ethylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Hexachlorobutadiene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Isopropylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
m&p-Xylene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Methyl Ethyl Ketone	ND	40	ug/Kg	01/12/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	13	ug/Kg	01/12/15	JLI	SW8260
Methylene chloride	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Naphthalene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
n-Butylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
n-Propylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
o-Xylene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
p-Isopropyltoluene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
sec-Butylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Styrene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
tert-Butylbenzene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Tetrachloroethene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	13	ug/Kg	01/12/15	JLI	SW8260
Toluene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Total Xylenes	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	13	ug/Kg	01/12/15	JLI	SW8260
Trichloroethene	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Trichlorofluoromethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Trichlorotrifluoroethane	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
Vinyl chloride	ND	6.7	ug/Kg	01/12/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	103		%	01/12/15	JLI	70 - 130 %
% Bromofluorobenzene	98		%	01/12/15	JLI	70 - 130 %
% Dibromofluoromethane	101		%	01/12/15	JLI	70 - 130 %
% Toluene-d8	100		%	01/12/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Acenaphthene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Acenaphthylene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Anthracene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Benz(a)anthracene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Benzo(a)pyrene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Benzo(b)fluoranthene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Benzo(ghi)perylene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Benzo(k)fluoranthene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Chrysene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Fluoranthene	270	260	ug/Kg	01/13/15	DD	SW 8270

Project ID: CENTER ST BRIDGE
Client ID: SED-1

Phoenix I.D.: BH61997

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Naphthalene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Phenanthrene	ND	260	ug/Kg	01/13/15	DD	SW 8270
Pyrene	ND	260	ug/Kg	01/13/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	80		%	01/13/15	DD	30 - 130 %
% Nitrobenzene-d5	77		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	69		%	01/13/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

TPH Comment:
**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C9 to C36. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SEDIMENT	Collected by:	JC	01/09/15	8:20
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH61998

Project ID: CENTER ST BRIDGE
Client ID: SED-2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.37	0.37	mg/Kg	01/13/15	LK	SW6010
Arsenic	3.5	0.7	mg/Kg	01/13/15	LK	SW6010
Barium	150	0.37	mg/Kg	01/13/15	LK	SW6010
Cadmium	< 0.37	0.37	mg/Kg	01/13/15	LK	SW6010
Chromium	15.7	0.37	mg/Kg	01/13/15	LK	SW6010
Mercury	< 0.07	0.07	mg/kg	01/14/15	RS	SW-7471
Lead	36.3	0.37	mg/Kg	01/13/15	LK	SW6010
Selenium	< 1.9	1.9	mg/Kg	01/13/15	LK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/13/15	EK	SW6010
SPLP Barium	0.032	0.010	mg/L	01/13/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/13/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/13/15	RS	SW7470
SPLP Lead	0.012	0.010	mg/L	01/13/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/13/15	EK	SW6010
SPLP Metals Digestion	Completed			01/13/15	I/I	SW846-3005
Percent Solid	93		%	01/12/15	I	SW846
Soil Extraction for PCB	Completed			01/12/15	BC/H	SW3545
Soil Extraction for Pesticide	Completed			01/12/15	BC	SW3545
Soil Extraction SVOA PAH	Completed			01/12/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/12/15	BC/V	3545
Mercury Digestion	Completed			01/14/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/13/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/13/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/12/15	I	EPA 1312
Total Metals Digest	Completed			01/12/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/09/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4,5-TP (Silvex)	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4-D	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4-DB	ND	440	ug/Kg	01/14/15	BB	SW8151
Dalapon	ND	44	ug/Kg	01/14/15	BB	SW8151
Dicamba	ND	89	ug/Kg	01/14/15	BB	SW8151
Dichloroprop	ND	44	ug/Kg	01/14/15	BB	SW8151
Dinoseb	ND	89	ug/Kg	01/14/15	BB	SW8151
QA/QC Surrogates						
% DCAA	58		%	01/14/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	53	mg/Kg	01/13/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/13/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	82		%	01/13/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1221	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1232	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1242	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1248	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1254	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1260	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1262	ND	360	ug/Kg	01/13/15	AW	SW 8082
PCB-1268	ND	360	ug/Kg	01/13/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	143		%	01/13/15	AW	30 - 150 %
% TCMX	111		%	01/13/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.1	ug/Kg	01/13/15	CE	SW8081
4,4' -DDE	ND	7.1	ug/Kg	01/13/15	CE	SW8081
4,4' -DDT	ND	7.1	ug/Kg	01/13/15	CE	SW8081
a-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Alachlor	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Aldrin	ND	3.6	ug/Kg	01/13/15	CE	SW8081
b-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Chlordane	ND	36	ug/Kg	01/13/15	CE	SW8081
d-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Dieldrin	ND	3.6	ug/Kg	01/13/15	CE	SW8081
Endosulfan I	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endosulfan II	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endosulfan sulfate	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin aldehyde	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin ketone	ND	7.1	ug/Kg	01/13/15	CE	SW8081

Project ID: CENTER ST BRIDGE
Client ID: SED-2

Phoenix I.D.: BH61998

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.4	ug/Kg	01/13/15	CE	SW8081
Heptachlor	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Heptachlor epoxide	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Methoxychlor	ND	36	ug/Kg	01/13/15	CE	SW8081
Toxaphene	ND	140	ug/Kg	01/13/15	CE	SW8081
QA/QC Surrogates						
% DCBP	91		%	01/13/15	CE	30 - 150 %
% TCMX	100		%	01/13/15	CE	30 - 150 %

Volatiles

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,1,2-Tetrachloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,1,1-Trichloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	4.3	ug/Kg	01/12/15	JLI	SW8260
1,1,2-Trichloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloropropene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichloropropane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromoethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloropropane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichloropropane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
1,4-Dichlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
2,2-Dichloropropane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
2-Chlorotoluene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
2-Hexanone	ND	35	ug/Kg	01/12/15	JLI	SW8260
2-Isopropyltoluene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
4-Chlorotoluene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
4-Methyl-2-pentanone	ND	35	ug/Kg	01/12/15	JLI	SW8260
Acetone	ND	43	ug/Kg	01/12/15	JLI	SW8260
Acrylonitrile	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Benzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Bromobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Bromochloromethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Bromodichloromethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Bromoform	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Bromomethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Carbon Disulfide	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Carbon tetrachloride	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Chlorobenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Chloroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Chloroform	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Chloromethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Dibromochloromethane	ND	4.3	ug/Kg	01/12/15	JLI	SW8260
Dibromomethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Dichlorodifluoromethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Ethylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Hexachlorobutadiene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Isopropylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
m&p-Xylene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Methyl Ethyl Ketone	ND	43	ug/Kg	01/12/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	14	ug/Kg	01/12/15	JLI	SW8260
Methylene chloride	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Naphthalene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
n-Butylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
n-Propylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
o-Xylene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
p-Isopropyltoluene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
sec-Butylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Styrene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
tert-Butylbenzene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Tetrachloroethene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	14	ug/Kg	01/12/15	JLI	SW8260
Toluene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Total Xylenes	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	14	ug/Kg	01/12/15	JLI	SW8260
Trichloroethene	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Trichlorofluoromethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Trichlorotrifluoroethane	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
Vinyl chloride	ND	7.1	ug/Kg	01/12/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	97		%	01/12/15	JLI	70 - 130 %
% Bromofluorobenzene	98		%	01/12/15	JLI	70 - 130 %
% Dibromofluoromethane	104		%	01/12/15	JLI	70 - 130 %
% Toluene-d8	92		%	01/12/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Acenaphthene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Acenaphthylene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Anthracene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benz(a)anthracene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(a)pyrene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(b)fluoranthene	260	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(ghi)perylene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(k)fluoranthene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Chrysene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Fluoranthene	340	250	ug/Kg	01/13/15	DD	SW 8270

Project ID: CENTER ST BRIDGE
Client ID: SED-2

Phoenix I.D.: BH61998

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Naphthalene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Phenanthrene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Pyrene	280	250	ug/Kg	01/13/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	78		%	01/13/15	DD	30 - 130 %
% Nitrobenzene-d5	75		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	59		%	01/13/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SEDIMENT	Collected by:	JC	01/09/15	8:10
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH61999

Project ID: CENTER ST BRIDGE
Client ID: SED-3

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.33	0.33	mg/Kg	01/13/15	LK	SW6010
Arsenic	3.8	0.7	mg/Kg	01/13/15	LK	SW6010
Barium	113	0.33	mg/Kg	01/13/15	LK	SW6010
Cadmium	1.39	0.33	mg/Kg	01/13/15	LK	SW6010
Chromium	13.2	0.33	mg/Kg	01/13/15	LK	SW6010
Mercury	< 0.09	0.09	mg/kg	01/14/15	RS	SW-7471
Lead	77.7	0.33	mg/Kg	01/13/15	LK	SW6010
Selenium	< 1.6	1.6	mg/Kg	01/13/15	LK	SW6010
SPLP Silver	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Arsenic	< 0.004	0.004	mg/L	01/13/15	EK	SW6010
SPLP Barium	0.029	0.010	mg/L	01/13/15	EK	SW6010
SPLP Cadmium	< 0.005	0.005	mg/L	01/13/15	EK	SW6010
SPLP Chromium	< 0.010	0.010	mg/L	01/13/15	EK	SW6010
SPLP Mercury	< 0.0005	0.0005	mg/L	01/13/15	RS	SW7470
SPLP Lead	0.016	0.010	mg/L	01/13/15	EK	SW6010
SPLP Selenium	< 0.020	0.020	mg/L	01/13/15	EK	SW6010
SPLP Metals Digestion	Completed			01/13/15	I/I	SW846-3005
Percent Solid	93		%	01/12/15	I	SW846
Soil Extraction for PCB	Completed			01/12/15	BC/H	SW3545
Soil Extraction for Pesticide	Completed			01/12/15	BC	SW3545
Soil Extraction SVOA PAH	Completed			01/12/15	BJ/VH	SW3545
Extraction of CT ETPH	Completed			01/12/15	BC/V	3545
Mercury Digestion	Completed			01/14/15	I/I	SW7471
Soil Extraction for Herbicide	Completed			01/13/15	P/D	SW8151
SPLP Digestion Mercury	Completed			01/13/15	I/I	E1312/SW7470
SPLP Extraction for Metals	Completed			01/12/15	I	EPA 1312
Total Metals Digest	Completed			01/12/15	CB/T	SW846 - 3050
Field Extraction	Completed			01/09/15		SW5035

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Chlorinated Herbicides						
2,4,5-T	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4,5-TP (Silvex)	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4-D	ND	44	ug/Kg	01/14/15	BB	SW8151
2,4-DB	ND	440	ug/Kg	01/14/15	BB	SW8151
Dalapon	ND	44	ug/Kg	01/14/15	BB	SW8151
Dicamba	ND	89	ug/Kg	01/14/15	BB	SW8151
Dichloroprop	ND	44	ug/Kg	01/14/15	BB	SW8151
Dinoseb	ND	89	ug/Kg	01/14/15	BB	SW8151
QA/QC Surrogates						
% DCAA	60		%	01/14/15	BB	30 - 150 %
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	52	mg/Kg	01/13/15	JRB	CT ETPH/8015
Identification	ND		mg/Kg	01/13/15	JRB	CT ETPH/8015
QA/QC Surrogates						
% n-Pentacosane	95		%	01/13/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1221	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1232	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1242	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1248	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1254	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1260	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1262	ND	350	ug/Kg	01/13/15	AW	SW 8082
PCB-1268	ND	350	ug/Kg	01/13/15	AW	SW 8082
QA/QC Surrogates						
% DCBP	123		%	01/13/15	AW	30 - 150 %
% TCMX	106		%	01/13/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	7.1	ug/Kg	01/13/15	CE	SW8081
4,4' -DDE	ND	7.1	ug/Kg	01/13/15	CE	SW8081
4,4' -DDT	ND	7.1	ug/Kg	01/13/15	CE	SW8081
a-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Alachlor	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Aldrin	ND	3.5	ug/Kg	01/13/15	CE	SW8081
b-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Chlordane	ND	35	ug/Kg	01/13/15	CE	SW8081
d-BHC	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Dieldrin	ND	3.5	ug/Kg	01/13/15	CE	SW8081
Endosulfan I	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endosulfan II	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endosulfan sulfate	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin aldehyde	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Endrin ketone	ND	7.1	ug/Kg	01/13/15	CE	SW8081

Project ID: CENTER ST BRIDGE
Client ID: SED-3

Phoenix I.D.: BH61999

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
g-BHC	ND	1.4	ug/Kg	01/13/15	CE	SW8081
Heptachlor	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Heptachlor epoxide	ND	7.1	ug/Kg	01/13/15	CE	SW8081
Methoxychlor	ND	35	ug/Kg	01/13/15	CE	SW8081
Toxaphene	ND	140	ug/Kg	01/13/15	CE	SW8081
QA/QC Surrogates						
% DCBP	90		%	01/13/15	CE	30 - 150 %
% TCMX	100		%	01/13/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,1,1-Trichloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,1,2,2-Tetrachloroethane	ND	2.9	ug/Kg	01/12/15	JLI	SW8260
1,1,2-Trichloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloroethene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,1-Dichloropropene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2,3-Trichloropropane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trichlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2,4-Trimethylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromo-3-chloropropane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2-Dibromoethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,2-Dichloropropane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,3,5-Trimethylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,3-Dichloropropane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
1,4-Dichlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
2,2-Dichloropropane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
2-Chlorotoluene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
2-Hexanone	ND	24	ug/Kg	01/12/15	JLI	SW8260
2-Isopropyltoluene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
4-Chlorotoluene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
4-Methyl-2-pentanone	ND	24	ug/Kg	01/12/15	JLI	SW8260
Acetone	ND	29	ug/Kg	01/12/15	JLI	SW8260
Acrylonitrile	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Benzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Bromobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Bromochloromethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Bromodichloromethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Bromoform	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Bromomethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Carbon Disulfide	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Carbon tetrachloride	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Chlorobenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Chloroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Chloroform	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Chloromethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260

Project ID: CENTER ST BRIDGE
Client ID: SED-3

Phoenix I.D.: BH61999

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
cis-1,2-Dichloroethene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
cis-1,3-Dichloropropene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Dibromochloromethane	ND	2.9	ug/Kg	01/12/15	JLI	SW8260
Dibromomethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Dichlorodifluoromethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Ethylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Hexachlorobutadiene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Isopropylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
m&p-Xylene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Methyl Ethyl Ketone	ND	29	ug/Kg	01/12/15	JLI	SW8260
Methyl t-butyl ether (MTBE)	ND	9.7	ug/Kg	01/12/15	JLI	SW8260
Methylene chloride	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Naphthalene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
n-Butylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
n-Propylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
o-Xylene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
p-Isopropyltoluene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
sec-Butylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Styrene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
tert-Butylbenzene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Tetrachloroethene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Tetrahydrofuran (THF)	ND	9.7	ug/Kg	01/12/15	JLI	SW8260
Toluene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Total Xylenes	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
trans-1,2-Dichloroethene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
trans-1,3-Dichloropropene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
trans-1,4-dichloro-2-butene	ND	9.7	ug/Kg	01/12/15	JLI	SW8260
Trichloroethene	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Trichlorofluoromethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Trichlorotrifluoroethane	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
Vinyl chloride	ND	4.8	ug/Kg	01/12/15	JLI	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	95		%	01/12/15	JLI	70 - 130 %
% Bromofluorobenzene	97		%	01/12/15	JLI	70 - 130 %
% Dibromofluoromethane	102		%	01/12/15	JLI	70 - 130 %
% Toluene-d8	93		%	01/12/15	JLI	70 - 130 %

Polynuclear Aromatic HC

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Acenaphthene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Acenaphthylene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Anthracene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benz(a)anthracene	430	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(a)pyrene	420	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(b)fluoranthene	550	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(ghi)perylene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Benzo(k)fluoranthene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Chrysene	440	250	ug/Kg	01/13/15	DD	SW 8270
Dibenz(a,h)anthracene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Fluoranthene	670	250	ug/Kg	01/13/15	DD	SW 8270

Project ID: CENTER ST BRIDGE
Client ID: SED-3

Phoenix I.D.: BH61999

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Fluorene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Naphthalene	ND	250	ug/Kg	01/13/15	DD	SW 8270
Phenanthrene	360	250	ug/Kg	01/13/15	DD	SW 8270
Pyrene	630	250	ug/Kg	01/13/15	DD	SW 8270
QA/QC Surrogates						
% 2-Fluorobiphenyl	84		%	01/13/15	DD	30 - 130 %
% Nitrobenzene-d5	79		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	72		%	01/13/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:	JC	01/09/15	8:30
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	24 Hour	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH62000

Project ID: CENTER ST BRIDGE
Client ID: SF-1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Arsenic	< 0.004	0.004	mg/L	01/13/15	LK	SW6010
Barium	0.116	0.002	mg/L	01/13/15	LK	SW6010
Cadmium	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Chromium	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Mercury	< 0.0002	0.0002	mg/L	01/13/15	RS	SW7470
Lead	< 0.002	0.002	mg/L	01/13/15	LK	SW6010
Selenium	< 0.010	0.010	mg/L	01/13/15	LK	SW6010
Mercury Digestion	Completed				I/I	SW7470
Semi-Volatile Extraction	Completed			01/12/15	E/D	SW3520
Total Metals Digestion	Completed				T	SW846 - 3050
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.07	mg/L	01/18/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/18/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	NR		%	01/18/15	JRB	50 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/12/15	HM	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260

Project ID: CENTER ST BRIDGE
Client ID: SF-1

Phoenix I.D.: BH62000

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/12/15	HM	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Hexanone	ND	5.0	ug/L	01/12/15	HM	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/12/15	HM	SW8260
Acetone	ND	25	ug/L	01/12/15	HM	SW8260
Acrylonitrile	ND	5.0	ug/L	01/12/15	HM	SW8260
Benzene	ND	0.70	ug/L	01/12/15	HM	SW8260
Bromobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromochloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Bromoform	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/12/15	HM	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Chlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroform	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Dibromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Ethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/12/15	HM	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
m&p-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/12/15	HM	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/12/15	HM	SW8260
Methylene chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Naphthalene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
o-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Styrene	ND	1.0	ug/L	01/12/15	HM	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrahydrofuran (THF)	4.0	2.5	ug/L	01/12/15	HM	SW8260
Toluene	ND	1.0	ug/L	01/12/15	HM	SW8260
Total Xylenes	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/12/15	HM	SW8260
Trichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Vinyl chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	100		%	01/12/15	HM	70 - 130 %
% Bromofluorobenzene	98		%	01/12/15	HM	70 - 130 %
% Dibromofluoromethane	105		%	01/12/15	HM	70 - 130 %
% Toluene-d8	98		%	01/12/15	HM	70 - 130 %

Semivolatiles by SIM

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Acenaphthene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Acenaphthylene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Anthracene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Benz(a)anthracene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(a)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Chrysene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/13/15	DD	8270(SIM)
Fluoranthene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Fluorene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Naphthalene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Phenanthrene	ND	0.07	ug/L	01/13/15	DD	8270(SIM)
Pyrene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	47		%	01/13/15	DD	30 - 130 %
% Nitrobenzene-d5	54		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	79		%	01/13/15	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

NR= Not reported. Sample run from SIM extract. No surrogate to report.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:	JC	01/09/15	8:05
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	24 Hour	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH62001

Project ID: CENTER ST BRIDGE
Client ID: SF-2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Arsenic	< 0.004	0.004	mg/L	01/13/15	LK	SW6010
Barium	0.122	0.002	mg/L	01/13/15	LK	SW6010
Cadmium	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Chromium	< 0.001	0.001	mg/L	01/13/15	LK	SW6010
Mercury	< 0.0002	0.0002	mg/L	01/13/15	RS	SW7470
Lead	< 0.002	0.002	mg/L	01/13/15	LK	SW6010
Selenium	< 0.010	0.010	mg/L	01/13/15	LK	SW6010
Mercury Digestion	Completed				I/I	SW7470
Semi-Volatile Extraction	Completed			01/12/15	E/D	SW3520
Total Metals Digestion	Completed				T	SW846 - 3050
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.07	mg/L	01/18/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/18/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	NR		%	01/18/15	JRB	50 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/12/15	HM	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260

Project ID: CENTER ST BRIDGE
Client ID: SF-2

Phoenix I.D.: BH62001

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/12/15	HM	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Hexanone	ND	5.0	ug/L	01/12/15	HM	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/12/15	HM	SW8260
Acetone	ND	25	ug/L	01/12/15	HM	SW8260
Acrylonitrile	ND	5.0	ug/L	01/12/15	HM	SW8260
Benzene	ND	0.70	ug/L	01/12/15	HM	SW8260
Bromobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromochloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Bromoform	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/12/15	HM	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Chlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroform	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Dibromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Ethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/12/15	HM	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
m&p-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/12/15	HM	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/12/15	HM	SW8260
Methylene chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Naphthalene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
o-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Styrene	ND	1.0	ug/L	01/12/15	HM	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrahydrofuran (THF)	6.3	2.5	ug/L	01/12/15	HM	SW8260
Toluene	ND	1.0	ug/L	01/12/15	HM	SW8260
Total Xylenes	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/12/15	HM	SW8260
Trichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Vinyl chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	102		%	01/12/15	HM	70 - 130 %
% Bromofluorobenzene	100		%	01/12/15	HM	70 - 130 %
% Dibromofluoromethane	104		%	01/12/15	HM	70 - 130 %
% Toluene-d8	100		%	01/12/15	HM	70 - 130 %

Semivolatiles by SIM

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Acenaphthene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Acenaphthylene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Anthracene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Benz(a)anthracene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(a)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Chrysene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/13/15	DD	8270(SIM)
Fluoranthene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Fluorene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Naphthalene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
Phenanthrene	ND	0.08	ug/L	01/13/15	DD	8270(SIM)
Pyrene	ND	0.11	ug/L	01/13/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	50		%	01/13/15	DD	30 - 130 %
% Nitrobenzene-d5	59		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	82		%	01/13/15	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

NR= Not reported. Sample run from SIM extract. No surrogate to report.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:	JC	01/09/15	11:00
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH62002

Project ID: CENTER ST BRIDGE
Client ID: FIELD BLANK

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Semi-Volatile Extraction	Completed			01/12/15	E/D	SW3520
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.07	mg/L	01/18/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/18/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	NR		%	01/18/15	JRB	50 - 150 %
Semivolatiles by SIM						
2-Methylnaphthalene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Acenaphthene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Acenaphthylene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Anthracene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Benz(a)anthracene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(a)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Chrysene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/13/15	DD	8270(SIM)
Fluoranthene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Fluorene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	01/13/15	DD	8270(SIM)
Naphthalene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
Phenanthrene	ND	0.07	ug/L	01/13/15	DD	8270(SIM)
Pyrene	ND	0.10	ug/L	01/13/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	51		%	01/13/15	DD	30 - 130 %

Project ID: CENTER ST BRIDGE
Client ID: FIELD BLANK

Phoenix I.D.: BH62002

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Nitrobenzene-d5	57		%	01/13/15	DD	30 - 130 %
% Terphenyl-d14	96		%	01/13/15	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

NR= Not reported. Sample run from SIM extract. No surrogate to report.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:	JC	01/09/15	0:00
Location Code:	REDTECH	Received by:	SW	01/12/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH62003

Project ID: CENTER ST BRIDGE
Client ID: TRIP BLANK

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/12/15	HM	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/12/15	HM	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
2-Hexanone	ND	5.0	ug/L	01/12/15	HM	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/12/15	HM	SW8260

Project ID: CENTER ST BRIDGE
Client ID: TRIP BLANK

Phoenix I.D.: BH62003

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Acetone	ND	25	ug/L	01/12/15	HM	SW8260
Acrylonitrile	ND	5.0	ug/L	01/12/15	HM	SW8260
Benzene	ND	0.70	ug/L	01/12/15	HM	SW8260
Bromobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromochloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Bromoform	ND	1.0	ug/L	01/12/15	HM	SW8260
Bromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/12/15	HM	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Chlorobenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloroform	ND	1.0	ug/L	01/12/15	HM	SW8260
Chloromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/12/15	HM	SW8260
Dibromomethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Ethylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/12/15	HM	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
m&p-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/12/15	HM	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/12/15	HM	SW8260
Methylene chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
Naphthalene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
o-Xylene	ND	1.0	ug/L	01/12/15	HM	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/12/15	HM	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Styrene	ND	1.0	ug/L	01/12/15	HM	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Tetrahydrofuran (THF)	ND	2.5	ug/L	01/12/15	HM	SW8260
Toluene	ND	1.0	ug/L	01/12/15	HM	SW8260
Total Xylenes	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/12/15	HM	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/12/15	HM	SW8260
Trichloroethene	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/12/15	HM	SW8260
Vinyl chloride	ND	1.0	ug/L	01/12/15	HM	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	96		%	01/12/15	HM	70 - 130 %
% Bromofluorobenzene	94		%	01/12/15	HM	70 - 130 %
% Dibromofluoromethane	91		%	01/12/15	HM	70 - 130 %

Project ID: CENTER ST BRIDGE
Client ID: TRIP BLANK

Phoenix I.D.: BH62003

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% Toluene-d8	99		%	01/12/15	HM	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:	JC	01/14/15	8:10
Location Code:	REDTECH	Received by:	LB	01/14/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH63051

Project ID: CENTER STREET BRIDGE
Client ID: SF-1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Extraction for Herbicide	Completed			01/16/15	F/D	SW8151
PCB Extraction	Completed			01/14/15	L	SW3510C
Extraction for Pest (2 Liter)	Completed			01/14/15	L	SW3510
Chlorinated Herbicides						
2,4,5-T	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4-D	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4-DB	ND	13	ug/L	01/19/15	BB	SW8151
Dalapon	ND	1.3	ug/L	01/19/15	BB	SW8151
Dicamba	ND	2.6	ug/L	01/19/15	BB	SW8151
Dichloroprop	ND	1.3	ug/L	01/19/15	BB	SW8151
Dinoseb	ND	2.6	ug/L	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	87		%	01/19/15	BB	30 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1221	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1232	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1242	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1248	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1254	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1260	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1262	ND	0.11	ug/L	01/15/15	AW	8082
PCB-1268	ND	0.11	ug/L	01/15/15	AW	8082
QA/QC Surrogates						
% DCBP	78		%	01/15/15	AW	30 - 150 %

Project ID: CENTER STREET BRIDGE
Client ID: SF-1

Phoenix I.D.: BH63051

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% TCMX	62		%	01/15/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	0.053	ug/L	01/15/15	CE	SW8081
4,4' -DDE	ND	0.053	ug/L	01/15/15	CE	SW8081
4,4' -DDT	ND	0.053	ug/L	01/15/15	CE	SW8081
a-BHC	ND	0.026	ug/L	01/15/15	CE	SW8081
Alachlor	ND	0.079	ug/L	01/15/15	CE	SW8081
Aldrin	ND	0.002	ug/L	01/15/15	CE	SW8081
b-BHC	ND	0.005	ug/L	01/15/15	CE	SW8081
Chlordane	ND	0.32	ug/L	01/15/15	CE	SW8081
d-BHC	ND	0.026	ug/L	01/15/15	CE	SW8081
Dieldrin	ND	0.005	ug/L	01/15/15	CE	SW8081
Endosulfan I	ND	0.053	ug/L	01/15/15	CE	SW8081
Endosulfan II	ND	0.053	ug/L	01/15/15	CE	SW8081
Endosulfan Sulfate	ND	0.053	ug/L	01/15/15	CE	SW8081
Endrin	ND	0.053	ug/L	01/15/15	CE	SW8081
Endrin Aldehyde	ND	0.053	ug/L	01/15/15	CE	SW8081
Endrin ketone	ND	0.053	ug/L	01/15/15	CE	SW8081
g-BHC (Lindane)	ND	0.026	ug/L	01/15/15	CE	SW8081
Heptachlor	ND	0.026	ug/L	01/15/15	CE	SW8081
Heptachlor epoxide	ND	0.026	ug/L	01/15/15	CE	SW8081
Methoxychlor	ND	0.11	ug/L	01/15/15	CE	SW8081
Toxaphene	ND	1.1	ug/L	01/15/15	CE	SW8081
QA/QC Surrogates						
%DCBP (Surrogate Rec)	77		%	01/15/15	CE	30 - 150 %
%TCMX (Surrogate Rec)	66		%	01/15/15	CE	30 - 150 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 29, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:	JC	01/14/15	8:25
Location Code:	REDTECH	Received by:	LB	01/14/15	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH61997
Phoenix ID: BH63052

Project ID: CENTER STREET BRIDGE
Client ID: SF-2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Extraction for Herbicide	Completed			01/16/15	F/D	SW8151
PCB Extraction	Completed			01/14/15	L	SW3510C
Extraction for Pest (2 Liter)	Completed			01/14/15	L	SW3510
Chlorinated Herbicides						
2,4,5-T	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4,5-TP (Silvex)	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4-D	ND	1.3	ug/L	01/19/15	BB	SW8151
2,4-DB	ND	13	ug/L	01/19/15	BB	SW8151
Dalapon	ND	1.3	ug/L	01/19/15	BB	SW8151
Dicamba	ND	2.5	ug/L	01/19/15	BB	SW8151
Dichloroprop	ND	1.3	ug/L	01/19/15	BB	SW8151
Dinoseb	ND	2.5	ug/L	01/19/15	BB	SW8151
QA/QC Surrogates						
% DCAA	81		%	01/19/15	BB	30 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1221	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1232	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1242	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1248	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1254	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1260	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1262	ND	0.10	ug/L	01/15/15	AW	8082
PCB-1268	ND	0.10	ug/L	01/15/15	AW	8082
QA/QC Surrogates						
% DCBP	74		%	01/15/15	AW	30 - 150 %

Project ID: CENTER STREET BRIDGE
Client ID: SF-2

Phoenix I.D.: BH63052

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
% TCMX	70		%	01/15/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	0.050	ug/L	01/15/15	CE	SW8081
4,4' -DDE	ND	0.050	ug/L	01/15/15	CE	SW8081
4,4' -DDT	ND	0.050	ug/L	01/15/15	CE	SW8081
a-BHC	ND	0.025	ug/L	01/15/15	CE	SW8081
Alachlor	ND	0.075	ug/L	01/15/15	CE	SW8081
Aldrin	ND	0.002	ug/L	01/15/15	CE	SW8081
b-BHC	ND	0.005	ug/L	01/15/15	CE	SW8081
Chlordane	ND	0.30	ug/L	01/15/15	CE	SW8081
d-BHC	ND	0.025	ug/L	01/15/15	CE	SW8081
Dieldrin	ND	0.005	ug/L	01/15/15	CE	SW8081
Endosulfan I	ND	0.050	ug/L	01/15/15	CE	SW8081
Endosulfan II	ND	0.050	ug/L	01/15/15	CE	SW8081
Endosulfan Sulfate	ND	0.050	ug/L	01/15/15	CE	SW8081
Endrin	ND	0.050	ug/L	01/15/15	CE	SW8081
Endrin Aldehyde	ND	0.050	ug/L	01/15/15	CE	SW8081
Endrin ketone	ND	0.050	ug/L	01/15/15	CE	SW8081
g-BHC (Lindane)	ND	0.025	ug/L	01/15/15	CE	SW8081
Heptachlor	ND	0.025	ug/L	01/15/15	CE	SW8081
Heptachlor epoxide	ND	0.025	ug/L	01/15/15	CE	SW8081
Methoxychlor	ND	0.10	ug/L	01/15/15	CE	SW8081
Toxaphene	ND	1.0	ug/L	01/15/15	CE	SW8081
QA/QC Surrogates						
%DCBP (Surrogate Rec)	76		%	01/15/15	CE	30 - 150 %
%TCMX (Surrogate Rec)	84		%	01/15/15	CE	30 - 150 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 29, 2015

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 296986, QC Sample No: BH58509 (BH61997, BH61998, BH61999)													
Mercury - Soil	BRL	<0.08	<0.08	NC	103	100	3.0	103	95.3	7.8	70 - 130	30	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													
QA/QC Batch 296846, QC Sample No: BH61823 (BH61999)													
ICP Metals - Soil													
Arsenic	BRL	<0.7	<0.70	NC	104	103	1.0	98.9	97.8	1.1	75 - 125	30	
Barium	BRL	43.0	43.2	0.50	112	110	1.8	107	103	3.8	75 - 125	30	
Cadmium	BRL	<0.34	<0.35	NC	94.6	93.0	1.7	99.0	97.5	1.5	75 - 125	30	
Chromium	BRL	10.5	11.8	11.7	106	104	1.9	104	101	2.9	75 - 125	30	
Lead	BRL	2.04	2.13	4.30	93.9	92.8	1.2	97.4	96.3	1.1	75 - 125	30	
Selenium	BRL	<1.4	<1.4	NC	94.7	94.7	0.0	86.0	85.4	0.7	75 - 125	30	
Silver	BRL	<0.34	<0.35	NC	99.7	99.7	0.0	101	99.3	1.7	75 - 125	30	
QA/QC Batch 296847, QC Sample No: BH61843 (BH61997, BH61998)													
ICP Metals - Soil													
Arsenic	BRL	1.1	1.09	NC	104	108	3.8	96.5	94.3	2.3	75 - 125	30	
Barium	BRL	74.7	75.1	0.50	112	117	4.4	>130	101	NC	75 - 125	30	m
Cadmium	BRL	<0.37	<0.39	NC	93.9	96.1	2.3	96.1	94.6	1.6	75 - 125	30	
Chromium	BRL	16.4	15.5	5.60	106	109	2.8	98.8	97.4	1.4	75 - 125	30	
Lead	BRL	5.30	4.88	8.30	93.5	97.3	4.0	93.9	92.4	1.6	75 - 125	30	
Selenium	BRL	<1.5	<1.5	NC	93.4	96.1	2.8	82.6	81.3	1.6	75 - 125	30	
Silver	BRL	<0.37	<0.39	NC	102	103	1.0	99.0	97.1	1.9	75 - 125	30	
QA/QC Batch 296886, QC Sample No: BH61880 (BH61997, BH61998, BH61999, BH62000, BH62001)													
Mercury - Water	BRL	<0.0002	<0.0002	NC	111	112	0.9	115	103	11.0	70 - 130	20	
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.													
QA/QC Batch 296887, QC Sample No: BH61997 (BH61997, BH61998, BH61999)													
ICP Metals - SPLP Extraction													
Arsenic	BRL	<0.004	<0.004	NC	104	107	2.8	105	103	1.9	75 - 125	20	
Barium	BRL	0.023	0.023	NC	106	107	0.9	108	105	2.8	75 - 125	20	
Cadmium	BRL	<0.005	<0.005	NC	106	108	1.9	106	104	1.9	75 - 125	20	
Chromium	BRL	<0.010	<0.010	NC	104	105	1.0	104	102	1.9	75 - 125	20	
Lead	BRL	<0.010	<0.010	NC	102	104	1.9	102	100	2.0	75 - 125	20	
Selenium	BRL	<0.020	<0.020	NC	100	103	3.0	102	99.7	2.3	75 - 125	20	
Silver	BRL	<0.010	<0.010	NC	101	101	0.0	101	98.8	2.2	75 - 125	20	
QA/QC Batch 296872, QC Sample No: BH62140 (BH62000, BH62001)													
ICP Metals - Aqueous													
Arsenic	BRL	<0.004	<0.004	NC	114	115	0.9	116	119	2.6	75 - 125	20	
Barium	BRL	0.013	0.013	0	109	110	0.9	101	101	0.0	75 - 125	20	
Cadmium	BRL	<0.001	<0.001	NC	107	106	0.9	108	109	0.9	75 - 125	20	
Chromium	BRL	0.002	0.002	NC	104	103	1.0	107	109	1.9	75 - 125	20	

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Lead	BRL	<0.002	<0.002	NC	106	106	0.0	103	105	1.9	75 - 125	20
Selenium	BRL	<0.010	<0.010	NC	110	111	0.9	111	116	4.4	75 - 125	20
Silver	BRL	<0.001	<0.001	NC	101	103	2.0	102	102	0.0	75 - 125	20

m = This parameter is outside laboratory ms/msd specified recovery limits.

PHOENIX

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QA/QC Report

January 29, 2015

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296845, QC Sample No: BH61508 (BH62000, BH62001, BH62002)									
Polynuclear Aromatic HC - Surface Water									
2-Methylnaphthalene	ND	74	73	1.4				30 - 130	20
Acenaphthene	ND	68	67	1.5				30 - 130	20
Acenaphthylene	ND	75	75	0.0				30 - 130	20
Anthracene	ND	76	76	0.0				30 - 130	20
Benz(a)anthracene	ND	80	80	0.0				30 - 130	20
Benzo(a)pyrene	ND	72	72	0.0				30 - 130	20
Benzo(b)fluoranthene	ND	79	80	1.3				30 - 130	20
Benzo(ghi)perylene	ND	60	59	1.7				30 - 130	20
Benzo(k)fluoranthene	ND	82	81	1.2				30 - 130	20
Chrysene	ND	76	77	1.3				30 - 130	20
Dibenz(a,h)anthracene	ND	64	64	0.0				30 - 130	20
Fluoranthene	ND	75	72	4.1				30 - 130	20
Fluorene	ND	73	71	2.8				30 - 130	20
Indeno(1,2,3-cd)pyrene	ND	62	62	0.0				30 - 130	20
Naphthalene	ND	57	57	0.0				30 - 130	20
Phenanthrene	ND	68	68	0.0				30 - 130	20
Pyrene	ND	77	73	5.3				30 - 130	20
% 2-Fluorobiphenyl	55	55	55	0.0				30 - 130	20
% Nitrobenzene-d5	53	59	60	1.7				30 - 130	20
% Terphenyl-d14	72	69	66	4.4				30 - 130	20

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296755, QC Sample No: BH61796 (BH61997, BH61998, BH61999)									
Polychlorinated Biphenyls - Sediment									
PCB-1016	ND	86	93	7.8				40 - 140	30
PCB-1221	ND							40 - 140	30
PCB-1232	ND							40 - 140	30
PCB-1242	ND							40 - 140	30
PCB-1248	ND							40 - 140	30
PCB-1254	ND							40 - 140	30
PCB-1260	ND	88	94	6.6				40 - 140	30
PCB-1262	ND							40 - 140	30
PCB-1268	ND							40 - 140	30
% DCBP (Surrogate Rec)	96	94	103	9.1				30 - 150	30
% TCMX (Surrogate Rec)	93	91	99	8.4				30 - 150	30

Comment:

MS/MSD could not be reported for this batch due to PCBs in the unspiked sample.-aw

QA/QC Data

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296869, QC Sample No: BH61823 (BH61997, BH61998, BH61999)									
Chlorinated Herbicides - Sediment									
2,4,5-T	ND	68	68	0.0	59	50	16.5	40 - 140	30
2,4,5-TP (Silvex)	ND	73	70	4.2	64	61	4.8	40 - 140	30
2,4-D	ND	90	75	18.2	65	59	9.7	40 - 140	30
2,4-DB	ND	48	54	11.8	49	44	10.8	40 - 140	30
Dalapon	ND	76	72	5.4	62	58	6.7	40 - 140	30
Dicamba	ND	81	74	9.0	70	69	1.4	40 - 140	30
Dichloroprop	ND	72	67	7.2	65	62	4.7	40 - 140	30
Dinoseb	ND	77	71	8.1	76	68	11.1	40 - 140	30
% DCAA (Surrogate Rec)	75	69	64	7.5	62	61	1.6	30 - 150	30
QA/QC Batch 296834, QC Sample No: BH61823 (BH61997, BH61998, BH61999)									
Polynuclear Aromatic HC - Sediment									
2-Methylnaphthalene	ND	75	75	0.0	83	83	0.0	30 - 130	30
Acenaphthene	ND	77	76	1.3	85	85	0.0	30 - 130	30
Acenaphthylene	ND	78	78	0.0	86	85	1.2	30 - 130	30
Anthracene	ND	77	78	1.3	84	84	0.0	30 - 130	30
Benz(a)anthracene	ND	83	82	1.2	91	91	0.0	30 - 130	30
Benzo(a)pyrene	ND	81	83	2.4	90	89	1.1	30 - 130	30
Benzo(b)fluoranthene	ND	89	85	4.6	94	95	1.1	30 - 130	30
Benzo(ghi)perylene	ND	75	79	5.2	83	83	0.0	30 - 130	30
Benzo(k)fluoranthene	ND	86	89	3.4	99	95	4.1	30 - 130	30
Chrysene	ND	85	84	1.2	93	92	1.1	30 - 130	30
Dibenz(a,h)anthracene	ND	73	76	4.0	80	81	1.2	30 - 130	30
Fluoranthene	ND	80	82	2.5	90	89	1.1	30 - 130	30
Fluorene	ND	76	78	2.6	86	85	1.2	30 - 130	30
Indeno(1,2,3-cd)pyrene	ND	73	76	4.0	80	81	1.2	30 - 130	30
Naphthalene	ND	77	77	0.0	86	86	0.0	30 - 130	30
Phenanthrene	ND	82	81	1.2	89	89	0.0	30 - 130	30
Pyrene	ND	80	82	2.5	89	90	1.1	30 - 130	30
% 2-Fluorobiphenyl	59	75	75	0.0	83	84	1.2	30 - 130	30
% Nitrobenzene-d5	57	73	73	0.0	81	80	1.2	30 - 130	30
% Terphenyl-d14	69	83	86	3.6	90	92	2.2	30 - 130	30

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 296764, QC Sample No: BH61843 (BH61997, BH61998, BH61999)									
Pesticides - Sediment									
4,4' -DDD	ND	97	99	2.0	97	107	9.8	40 - 140	30
4,4' -DDE	ND	95	100	5.1	97	102	5.0	40 - 140	30
4,4' -DDT	ND	93	100	7.3	92	103	11.3	40 - 140	30
a-BHC	ND	84	85	1.2	84	88	4.7	40 - 140	30
a-Chlordane	ND	89	92	3.3	90	96	6.5	40 - 140	30
Alachlor	ND	NA	NA	NC	NA	NA	NC	40 - 140	30
Aldrin	ND	91	92	1.1	89	95	6.5	40 - 140	30
b-BHC	ND	82	82	0.0	83	88	5.8	40 - 140	30
Chlordane	ND	88	92	4.4	89	95	6.5	40 - 140	30
d-BHC	ND	72	74	2.7	77	82	6.3	40 - 140	30
Dieldrin	ND	91	93	2.2	93	99	6.3	40 - 140	30
Endosulfan I	ND	90	88	2.2	93	99	6.3	40 - 140	30
Endosulfan II	ND	74	68	8.5	89	95	6.5	40 - 140	30

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Endosulfan sulfate	ND	64	55	15.1	71	76	6.8	40 - 140	30	
Endrin	ND	93	98	5.2	96	102	6.1	40 - 140	30	
Endrin aldehyde	ND	57	42	30.3	73	77	5.3	40 - 140	30	
Endrin ketone	ND	85	77	9.9	87	102	15.9	40 - 140	30	
g-BHC	ND	85	85	0.0	85	90	5.7	40 - 140	30	
g-Chlordane	ND	88	92	4.4	89	95	6.5	40 - 140	30	
Heptachlor	ND	86	87	1.2	85	91	6.8	40 - 140	30	
Heptachlor epoxide	ND	88	89	1.1	89	94	5.5	40 - 140	30	
Methoxychlor	ND	92	91	1.1	93	100	7.3	40 - 140	30	
Toxaphene	ND	NA	NA	NC	NA	NA	NC	40 - 140	30	
% DCBP	100	96	96	0.0	87	99	12.9	30 - 150	30	
% TCMX	87	89	89	0.0	85	91	6.8	30 - 150	30	

QA/QC Batch 296903, QC Sample No: BH61843 (BH61997)

Volatiles - Sediment

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
1,1,1,2-Tetrachloroethane	ND	102	101	1.0	89	85	4.6	70 - 130	30	
1,1,1-Trichloroethane	ND	102	103	1.0	90	90	0.0	70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	105	105	0.0	98	95	3.1	70 - 130	30	
1,1,2-Trichloroethane	ND	99	100	1.0	86	81	6.0	70 - 130	30	
1,1-Dichloroethane	ND	98	100	2.0	90	91	1.1	70 - 130	30	
1,1-Dichloroethene	ND	109	109	0.0	90	92	2.2	70 - 130	30	
1,1-Dichloropropene	ND	104	102	1.9	89	88	1.1	70 - 130	30	
1,2,3-Trichlorobenzene	ND	88	102	14.7	51	33	42.9	70 - 130	30	m,r
1,2,3-Trichloropropane	ND	98	95	3.1	103	102	1.0	70 - 130	30	
1,2,4-Trichlorobenzene	ND	120	107	11.5	57	40	35.1	70 - 130	30	m,r
1,2,4-Trimethylbenzene	ND	97	97	0.0	93	89	4.4	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	98	99	1.0	85	74	13.8	70 - 130	30	
1,2-Dibromoethane	ND	102	104	1.9	85	81	4.8	70 - 130	30	
1,2-Dichlorobenzene	ND	92	100	8.3	81	70	14.6	70 - 130	30	
1,2-Dichloroethane	ND	100	101	1.0	90	89	1.1	70 - 130	30	
1,2-Dichloropropane	ND	102	103	1.0	90	88	2.2	70 - 130	30	
1,3,5-Trimethylbenzene	ND	105	103	1.9	97	92	5.3	70 - 130	30	
1,3-Dichlorobenzene	ND	104	101	2.9	86	77	11.0	70 - 130	30	
1,3-Dichloropropane	ND	101	101	0.0	91	92	1.1	70 - 130	30	
1,4-Dichlorobenzene	ND	101	99	2.0	84	76	10.0	70 - 130	30	
2,2-Dichloropropane	ND	103	104	1.0	87	88	1.1	70 - 130	30	
2-Chlorotoluene	ND	101	98	3.0	95	89	6.5	70 - 130	30	
2-Hexanone	ND	88	86	2.3	74	60	20.9	70 - 130	30	m
2-Isopropyltoluene	ND	103	102	1.0	91	81	11.6	70 - 130	30	
4-Chlorotoluene	ND	101	98	3.0	95	89	6.5	70 - 130	30	
4-Methyl-2-pentanone	ND	98	97	1.0	83	74	11.5	70 - 130	30	
Acetone	ND	90	89	1.1	65	57	13.1	70 - 130	30	m
Acrylonitrile	ND	97	99	2.0	83	74	11.5	70 - 130	30	
Benzene	ND	103	105	1.9	90	89	1.1	70 - 130	30	
Bromobenzene	ND	100	100	0.0	97	94	3.1	70 - 130	30	
Bromochloromethane	ND	105	105	0.0	92	93	1.1	70 - 130	30	
Bromodichloromethane	ND	105	106	0.9	89	86	3.4	70 - 130	30	
Bromoform	ND	109	101	7.6	88	75	16.0	70 - 130	30	
Bromomethane	ND	112	108	3.6	85	70	19.4	70 - 130	30	
Carbon Disulfide	ND	115	114	0.9	87	85	2.3	70 - 130	30	
Carbon tetrachloride	ND	102	102	0.0	89	87	2.3	70 - 130	30	
Chlorobenzene	ND	100	100	0.0	88	84	4.7	70 - 130	30	
Chloroethane	ND	101	102	1.0	87	91	4.5	70 - 130	30	

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Chloroform	ND	101	101	0.0	91	91	0.0	70 - 130	30	
Chloromethane	ND	97	99	2.0	83	81	2.4	70 - 130	30	
cis-1,2-Dichloroethene	ND	100	101	1.0	88	89	1.1	70 - 130	30	
cis-1,3-Dichloropropene	ND	110	111	0.9	88	80	9.5	70 - 130	30	
Dibromochloromethane	ND	106	107	0.9	92	88	4.4	70 - 130	30	
Dibromomethane	ND	100	101	1.0	88	87	1.1	70 - 130	30	
Dichlorodifluoromethane	ND	115	116	0.9	87	87	0.0	70 - 130	30	
Ethylbenzene	ND	103	103	0.0	89	86	3.4	70 - 130	30	
Hexachlorobutadiene	ND	109	106	2.8	58	37	44.2	70 - 130	30	m,r
Isopropylbenzene	ND	101	100	1.0	104	102	1.9	70 - 130	30	
m&p-Xylene	ND	103	103	0.0	88	84	4.7	70 - 130	30	
Methyl ethyl ketone	ND	94	93	1.1	74	65	12.9	70 - 130	30	m
Methyl t-butyl ether (MTBE)	ND	97	97	0.0	83	84	1.2	70 - 130	30	
Methylene chloride	ND	98	97	1.0	85	85	0.0	70 - 130	30	
Naphthalene	ND	100	103	3.0	59	41	36.0	70 - 130	30	m,r
n-Butylbenzene	ND	104	100	3.9	79	66	17.9	70 - 130	30	m
n-Propylbenzene	ND	97	94	3.1	99	96	3.1	70 - 130	30	
o-Xylene	ND	104	101	2.9	88	83	5.8	70 - 130	30	
p-Isopropyltoluene	ND	104	103	1.0	90	80	11.8	70 - 130	30	
sec-Butylbenzene	ND	104	103	1.0	91	80	12.9	70 - 130	30	
Styrene	ND	108	107	0.9	87	77	12.2	70 - 130	30	
tert-Butylbenzene	ND	101	100	1.0	97	90	7.5	70 - 130	30	
Tetrachloroethene	ND	104	102	1.9	90	87	3.4	70 - 130	30	
Tetrahydrofuran (THF)	ND	98	97	1.0	85	83	2.4	70 - 130	30	
Toluene	ND	103	104	1.0	87	85	2.3	70 - 130	30	
trans-1,2-Dichloroethene	ND	106	106	0.0	89	91	2.2	70 - 130	30	
trans-1,3-Dichloropropene	ND	111	111	0.0	88	81	8.3	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	108	110	1.8	102	92	10.3	70 - 130	30	
Trichloroethene	ND	104	104	0.0	90	87	3.4	70 - 130	30	
Trichlorofluoromethane	ND	110	110	0.0	93	95	2.1	70 - 130	30	
Trichlorotrifluoroethane	ND	109	109	0.0	90	90	0.0	70 - 130	30	
Vinyl chloride	ND	102	101	1.0	90	93	3.3	70 - 130	30	
% 1,2-dichlorobenzene-d4	103	104	103	1.0	99	98	1.0	70 - 130	30	
% Bromofluorobenzene	93	101	101	0.0	92	87	5.6	70 - 130	30	
% Dibromofluoromethane	103	102	104	1.9	104	102	1.9	70 - 130	30	
% Toluene-d8	98	101	101	0.0	99	98	1.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 296852, QC Sample No: BH61988 (BH61997, BH61998, BH61999)

TPH by GC (Extractable Products) - Sediment

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Ext. Petroleum HC	ND	88	80	9.5	72	66	8.7	60 - 120	30
% n-Pentacosane	89	94	86	8.9	86	82	4.8	50 - 150	30

QA/QC Batch 296899, QC Sample No: BH61998 (BH61998 (50, 1X) , BH61999)

Volatiles - Sediment

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1,2-Tetrachloroethane	ND	111	115	3.5	94	96	2.1	70 - 130	30
1,1,1-Trichloroethane	ND	114	117	2.6	92	96	4.3	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	119	119	0.0	91	94	3.2	70 - 130	30
1,1,2-Trichloroethane	ND	117	116	0.9	97	104	7.0	70 - 130	30
1,1-Dichloroethane	ND	114	117	2.6	94	98	4.2	70 - 130	30
1,1-Dichloroethene	ND	121	125	3.3	91	90	1.1	70 - 130	30
1,1-Dichloropropene	ND	110	113	2.7	97	99	2.0	70 - 130	30

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
1,2,3-Trichlorobenzene	ND	109	112	2.7	98	102	4.0	70 - 130	30	
1,2,3-Trichloropropane	ND	115	112	2.6	85	91	6.8	70 - 130	30	
1,2,4-Trichlorobenzene	ND	109	111	1.8	98	101	3.0	70 - 130	30	
1,2,4-Trimethylbenzene	ND	107	110	2.8	100	101	1.0	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	124	120	3.3	84	93	10.2	70 - 130	30	
1,2-Dibromoethane	ND	117	119	1.7	97	100	3.0	70 - 130	30	
1,2-Dichlorobenzene	ND	111	114	2.7	100	103	3.0	70 - 130	30	
1,2-Dichloroethane	ND	115	116	0.9	95	97	2.1	70 - 130	30	
1,2-Dichloropropane	ND	113	117	3.5	98	101	3.0	70 - 130	30	
1,3,5-Trimethylbenzene	ND	110	116	5.3	101	101	0.0	70 - 130	30	
1,3-Dichlorobenzene	ND	107	110	2.8	97	99	2.0	70 - 130	30	
1,3-Dichloropropane	ND	112	112	0.0	95	98	3.1	70 - 130	30	
1,4-Dichlorobenzene	ND	106	109	2.8	98	100	2.0	70 - 130	30	
2,2-Dichloropropane	ND	112	117	4.4	89	91	2.2	70 - 130	30	
2-Chlorotoluene	ND	109	113	3.6	100	99	1.0	70 - 130	30	
2-Hexanone	ND	110	106	3.7	79	84	6.1	70 - 130	30	
2-Isopropyltoluene	ND	115	120	4.3	104	105	1.0	70 - 130	30	
4-Chlorotoluene	ND	107	110	2.8	98	98	0.0	70 - 130	30	
4-Methyl-2-pentanone	ND	116	111	4.4	83	90	8.1	70 - 130	30	
Acetone	ND	108	104	3.8	57	57	0.0	70 - 130	30	m
Acrylonitrile	ND	118	116	1.7	82	91	10.4	70 - 130	30	
Benzene	ND	112	116	3.5	98	100	2.0	70 - 130	30	
Bromobenzene	ND	114	115	0.9	101	102	1.0	70 - 130	30	
Bromochloromethane	ND	116	117	0.9	93	94	1.1	70 - 130	30	
Bromodichloromethane	ND	116	119	2.6	95	99	4.1	70 - 130	30	
Bromoform	ND	120	120	0.0	86	92	6.7	70 - 130	30	
Bromomethane	ND	113	113	0.0	60	72	18.2	70 - 130	30	m
Carbon Disulfide	ND	125	130	3.9	87	88	1.1	70 - 130	30	
Carbon tetrachloride	ND	114	120	5.1	95	99	4.1	70 - 130	30	
Chlorobenzene	ND	108	113	4.5	97	100	3.0	70 - 130	30	
Chloroethane	ND	122	128	4.8	26	25	3.9	70 - 130	30	m
Chloroform	ND	108	112	3.6	91	92	1.1	70 - 130	30	
Chloromethane	ND	120	122	1.7	93	94	1.1	70 - 130	30	
cis-1,2-Dichloroethene	ND	117	118	0.9	97	99	2.0	70 - 130	30	
cis-1,3-Dichloropropene	ND	121	125	3.3	98	103	5.0	70 - 130	30	
Dibromochloromethane	ND	118	123	4.1	93	97	4.2	70 - 130	30	
Dibromomethane	ND	118	121	2.5	96	101	5.1	70 - 130	30	
Dichlorodifluoromethane	ND	140	145	3.5	101	99	2.0	70 - 130	30	l
Ethylbenzene	ND	111	118	6.1	99	101	2.0	70 - 130	30	
Hexachlorobutadiene	ND	115	120	4.3	105	108	2.8	70 - 130	30	
Isopropylbenzene	ND	112	115	2.6	104	102	1.9	70 - 130	30	
m&p-Xylene	ND	105	111	5.6	97	99	2.0	70 - 130	30	
Methyl ethyl ketone	ND	110	107	2.8	72	79	9.3	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	110	112	1.8	89	94	5.5	70 - 130	30	
Methylene chloride	ND	98	99	1.0	75	77	2.6	70 - 130	30	
Naphthalene	ND	122	119	2.5	94	100	6.2	70 - 130	30	
n-Butylbenzene	ND	110	116	5.3	104	104	0.0	70 - 130	30	
n-Propylbenzene	ND	105	109	3.7	103	104	1.0	70 - 130	30	
o-Xylene	ND	110	114	3.6	100	102	2.0	70 - 130	30	
p-Isopropyltoluene	ND	112	118	5.2	103	104	1.0	70 - 130	30	
sec-Butylbenzene	ND	112	118	5.2	102	101	1.0	70 - 130	30	
Styrene	ND	112	116	3.5	101	104	2.9	70 - 130	30	
tert-Butylbenzene	ND	112	115	2.6	103	104	1.0	70 - 130	30	

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Tetrachloroethene	ND	109	114	4.5	103	102	1.0	70 - 130	30	
Tetrahydrofuran (THF)	ND	114	111	2.7	76	87	13.5	70 - 130	30	
Toluene	ND	115	118	2.6	100	104	3.9	70 - 130	30	
trans-1,2-Dichloroethene	ND	116	119	2.6	95	97	2.1	70 - 130	30	
trans-1,3-Dichloropropene	ND	124	124	0.0	96	100	4.1	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	123	123	0.0	86	94	8.9	70 - 130	30	
Trichloroethene	ND	115	120	4.3	100	104	3.9	70 - 130	30	
Trichlorofluoromethane	ND	119	125	4.9	35	36	2.8	70 - 130	30	m
Trichlorotrifluoroethane	ND	118	126	6.6	93	95	2.1	70 - 130	30	
Vinyl chloride	ND	120	123	2.5	108	112	3.6	70 - 130	30	
% 1,2-dichlorobenzene-d4	94	104	101	2.9	101	100	1.0	70 - 130	30	
% Bromofluorobenzene	96	98	98	0.0	98	97	1.0	70 - 130	30	
% Dibromofluoromethane	100	103	102	1.0	94	100	6.2	70 - 130	30	
% Toluene-d8	92	103	102	1.0	101	102	1.0	70 - 130	30	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 296917, QC Sample No: BH62003 (BH62000, BH62001, BH62002, BH62003)

Volatiles - Surface Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1,2-Tetrachloroethane	ND	105	104	1.0	91	112	20.7	70 - 130	30
1,1,1-Trichloroethane	ND	104	100	3.9	85	112	27.4	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	103	101	2.0	87	105	18.8	70 - 130	30
1,1,2-Trichloroethane	ND	100	101	1.0	89	108	19.3	70 - 130	30
1,1-Dichloroethane	ND	103	99	4.0	87	109	22.4	70 - 130	30
1,1-Dichloroethene	ND	102	96	6.1	77	103	28.9	70 - 130	30
1,1-Dichloropropene	ND	101	98	3.0	79	107	30.1	70 - 130	30
1,2,3-Trichlorobenzene	ND	100	101	1.0	89	102	13.6	70 - 130	30
1,2,3-Trichloropropane	ND	98	96	2.1	85	104	20.1	70 - 130	30
1,2,4-Trichlorobenzene	ND	101	102	1.0	90	106	16.3	70 - 130	30
1,2,4-Trimethylbenzene	ND	99	94	5.2	87	108	21.5	70 - 130	30
1,2-Dibromo-3-chloropropane	ND	104	103	1.0	91	112	20.7	70 - 130	30
1,2-Dibromoethane	ND	102	105	2.9	92	110	17.8	70 - 130	30
1,2-Dichlorobenzene	ND	100	98	2.0	90	107	17.3	70 - 130	30
1,2-Dichloroethane	ND	97	97	0.0	84	103	20.3	70 - 130	30
1,2-Dichloropropane	ND	100	99	1.0	87	106	19.7	70 - 130	30
1,3,5-Trimethylbenzene	ND	104	99	4.9	85	108	23.8	70 - 130	30
1,3-Dichlorobenzene	ND	103	99	4.0	89	108	19.3	70 - 130	30
1,3-Dichloropropane	ND	97	96	1.0	86	107	21.8	70 - 130	30
1,4-Dichlorobenzene	ND	99	98	1.0	89	106	17.4	70 - 130	30
2,2-Dichloropropane	ND	105	99	5.9	82	98	17.8	70 - 130	30
2-Chlorotoluene	ND	105	98	6.9	88	110	22.2	70 - 130	30
2-Hexanone	ND	86	90	4.5	81	101	22.0	70 - 130	30
2-Isopropyltoluene	ND	105	101	3.9	86	110	24.5	70 - 130	30
4-Chlorotoluene	ND	101	98	3.0	88	108	20.4	70 - 130	30
4-Methyl-2-pentanone	ND	90	91	1.1	83	101	19.6	70 - 130	30
Acetone	ND	97	94	3.1	80	105	27.0	70 - 130	30
Acrylonitrile	ND	102	98	4.0	87	107	20.6	70 - 130	30
Benzene	ND	104	100	3.9	85	108	23.8	70 - 130	30
Bromobenzene	ND	104	101	2.9	89	109	20.2	70 - 130	30
Bromochloromethane	ND	106	104	1.9	93	111	17.6	70 - 130	30
Bromodichloromethane	ND	104	102	1.9	89	109	20.2	70 - 130	30
Bromoform	ND	110	109	0.9	95	118	21.6	70 - 130	30
Bromomethane	ND	107	109	1.9	88	108	20.4	70 - 130	30

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Carbon Disulfide	ND	102	98	4.0	76	101	28.2	70 - 130	30	
Carbon tetrachloride	ND	104	100	3.9	81	111	31.3	70 - 130	30	r
Chlorobenzene	ND	101	99	2.0	88	108	20.4	70 - 130	30	
Chloroethane	ND	101	97	4.0	77	99	25.0	70 - 130	30	
Chloroform	ND	104	100	3.9	90	110	20.0	70 - 130	30	
Chloromethane	ND	102	97	5.0	77	100	26.0	70 - 130	30	
cis-1,2-Dichloroethene	ND	105	103	1.9	91	113	21.6	70 - 130	30	
cis-1,3-Dichloropropene	ND	105	104	1.0	89	107	18.4	70 - 130	30	
Dibromochloromethane	ND	105	104	1.0	92	114	21.4	70 - 130	30	
Dibromomethane	ND	100	100	0.0	89	109	20.2	70 - 130	30	
Dichlorodifluoromethane	ND	113	107	5.5	67	103	42.4	70 - 130	30	m,r
Ethylbenzene	ND	104	101	2.9	86	110	24.5	70 - 130	30	
Hexachlorobutadiene	ND	106	104	1.9	86	109	23.6	70 - 130	30	
Isopropylbenzene	ND	101	97	4.0	84	109	25.9	70 - 130	30	
m&p-Xylene	ND	101	99	2.0	86	109	23.6	70 - 130	30	
Methyl ethyl ketone	ND	91	89	2.2	81	99	20.0	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	101	102	1.0	86	104	18.9	70 - 130	30	
Methylene chloride	ND	97	93	4.2	85	102	18.2	70 - 130	30	
Naphthalene	ND	102	102	0.0	88	103	15.7	70 - 130	30	
n-Butylbenzene	ND	99	96	3.1	83	105	23.4	70 - 130	30	
n-Propylbenzene	ND	97	93	4.2	85	108	23.8	70 - 130	30	
o-Xylene	ND	101	100	1.0	87	109	22.4	70 - 130	30	
p-Isopropyltoluene	ND	104	100	3.9	85	109	24.7	70 - 130	30	
sec-Butylbenzene	ND	104	98	5.9	84	108	25.0	70 - 130	30	
Styrene	ND	103	101	2.0	89	110	21.1	70 - 130	30	
tert-Butylbenzene	ND	103	98	5.0	85	109	24.7	70 - 130	30	
Tetrachloroethene	ND	102	98	4.0	83	111	28.9	70 - 130	30	
Tetrahydrofuran (THF)	ND	93	93	0.0	83	100	18.6	70 - 130	30	
Toluene	ND	104	102	1.9	86	110	24.5	70 - 130	30	
trans-1,2-Dichloroethene	ND	109	104	4.7	86	111	25.4	70 - 130	30	
trans-1,3-Dichloropropene	ND	106	106	0.0	90	107	17.3	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	107	105	1.9	90	107	17.3	70 - 130	30	
Trichloroethene	ND	106	102	3.8	86	111	25.4	70 - 130	30	
Trichlorofluoromethane	ND	101	97	4.0	77	107	32.6	70 - 130	30	r
Trichlorotrifluoroethane	ND	102	99	3.0	78	108	32.3	70 - 130	30	r
Vinyl chloride	ND	98	95	3.1	76	103	30.2	70 - 130	30	
% 1,2-dichlorobenzene-d4	97	100	99	1.0	101	100	1.0	70 - 130	30	
% Bromofluorobenzene	96	100	99	1.0	100	100	0.0	70 - 130	30	
% Dibromofluoromethane	95	105	104	1.0	106	108	1.9	70 - 130	30	
% Toluene-d8	100	101	102	1.0	101	101	0.0	70 - 130	30	

Comment:

A blank MS/MSD was analyzed with this batch.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 297071, QC Sample No: BH62633 (BH63051, BH63052)

Pesticides - Surface Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
4,4' -DDD	ND	89	87	2.3				40 - 140	20
4,4' -DDE	ND	86	86	0.0				40 - 140	20
4,4' -DDT	ND	78	78	0.0				40 - 140	20
a-BHC	ND	85	83	2.4				40 - 140	20
a-Chlordane	ND	78	77	1.3				40 - 140	20
Alachlor	ND	NA	NA	NC				40 - 140	20
Aldrin	ND	80	78	2.5				40 - 140	20

QA/QC Data

SDG I.D.: GBH61997

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
b-BHC	ND	83	82	1.2				40 - 140	20
Chlordane	ND	80	79	1.3				40 - 140	20
d-BHC	ND	83	81	2.4				40 - 140	20
Dieldrin	ND	81	80	1.2				40 - 140	20
Endosulfan I	ND	84	82	2.4				40 - 140	20
Endosulfan II	ND	86	84	2.4				40 - 140	20
Endosulfan sulfate	ND	82	81	1.2				40 - 140	20
Endrin	ND	81	80	1.2				40 - 140	20
Endrin aldehyde	ND	81	86	6.0				40 - 140	20
Endrin ketone	ND	89	85	4.6				40 - 140	20
g-BHC	ND	83	82	1.2				40 - 140	20
g-Chlordane	ND	80	79	1.3				40 - 140	20
Heptachlor	ND	79	77	2.6				40 - 140	20
Heptachlor epoxide	ND	81	80	1.2				40 - 140	20
Methoxychlor	ND	76	75	1.3				40 - 140	20
Toxaphene	ND	NA	NA	NC				40 - 140	20
% DCBP	89	58	69	17.3				40 - 150	20
% TCMX	99	89	80	10.7				40 - 150	20
QA/QC Batch 297070, QC Sample No: BH62633 (BH63051, BH63052)									
Polychlorinated Biphenyls - Surface Water									
PCB-1016	ND	100	104	3.9				40 - 140	20
PCB-1221	ND							40 - 140	20
PCB-1232	ND							40 - 140	20
PCB-1242	ND							40 - 140	20
PCB-1248	ND							40 - 140	20
PCB-1254	ND							40 - 140	20
PCB-1260	ND	105	109	3.7				40 - 140	20
PCB-1262	ND							40 - 140	20
PCB-1268	ND							40 - 140	20
% DCBP (Surrogate Rec)	91	74	86	15.0				30 - 150	20
% TCMX (Surrogate Rec)	81	81	89	9.4				30 - 150	20
QA/QC Batch 297240, QC Sample No: BH63049 (BH63051, BH63052)									
Chlorinated Herbicides - Surface Water									
2,4,5-T	ND	89	86	3.4				40 - 140	20
2,4,5-TP (Silvex)	ND	86	81	6.0				40 - 140	20
2,4-D	ND	89	102	13.6				40 - 140	20
2,4-DB	ND	81	75	7.7				40 - 140	20
Dalapon	ND	82	79	3.7				40 - 140	20
Dicamba	ND	88	84	4.7				40 - 140	20
Dichloroprop	ND	81	79	2.5				40 - 140	20
Dinoseb	ND	88	80	9.5				40 - 140	20
% DCAA (Surrogate Rec)	89	79	77	2.6				30 - 150	20

l = This parameter is outside laboratory lcs/lcsd specified recovery limits.
m = This parameter is outside laboratory ms/msd specified recovery limits.
r = This parameter is outside laboratory rpd specified recovery limits.

QA/QC Data

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 29, 2015

Sample Criteria Exceedences Report

GBH61997 - REDTECH

Criteria: None

State: CT

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** Red Technologies, LLC

Project Location: CENTER ST BRIDGE **Project Number:**

Laboratory Sample ID(s): BH61997, BH61998, BH61999, BH62000, BH62001, BH62002, BH62003

Sampling Date(s): 1/9/2015

RCP Methods Used:

☑ 1311/1312	☑ 6010	☐ 7000	☐ 7196	☑ 7470/7471	☑ 8081	☐ EPH	☐ TO15
☑ 8082	☑ 8151	☑ 8260	☑ 8270	☑ ETPH	☐ 9010/9012	☐ VPH	

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents acheived? See Section: VOA Narration.	☐ Yes ☑ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☐ Yes ☑ No ☐ NA
7.	Are project-specific matrix spikes and laboratory duplicates included in the data set?	☑ Yes ☐ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Ethan Lee

Date: Thursday, January 29, 2015

Printed Name: Ethan Lee

Position: Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

BH61997, BH61998, BH61999, BH62000, BH62001 - The client requested a short list of analytes from the 6010 RCP Metals list. Only the RCRA 8 Metals are reported as requested on the chain of custody.

BH61997, BH61998, BH61999, BH62000, BH62001, BH62002 - The client requested a short list for 8270 RCP Semivolatile. Only the PAH constituents are reported as requested on the chain-of-custody.

ETPH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-fid1 01/13/15-2 (BH61998, BH61999)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/13/2015

Instrument: Au-fid1 01/14/15-1 (BH61997)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/14/2015

Instrument: Au-xl2 01/17/15-1 (BH62000, BH62001, BH62002)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/17/2015

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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NY # 11301

RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

QC (Batch Specific)

----------- Sample No: BH61988, QA/QC Batch: 296852 -----------

All LCS recoveries were within 60 - 120 with the following exceptions: None.

All LCSD recoveries were within 60 - 120 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Herbicide Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd12 01/19/15-1 (BH63051, BH63052)

Initial Calibration ECD12 -HRB107AI/BI
The initial calibration RSD for the compound list was less than 20% except for the following compounds: none

Printed Name Brian B
Position: Chemist
Date: 1/19/2015

Instrument: Au-ecd7 01/14/15-1 (BH61997, BH61998, BH61999)

Initial Calibration ECD7 - N25AI/BI
The initial calibration RSD for the compound list was less than 20% except for the following compounds: none

Printed Name Brian B
Position: Chemist
Date: 1/14/2015

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

QC (Batch Specific)

----------- Sample No: BH61823, QA/QC Batch: 296869 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH63049, QA/QC Batch: 297240 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

Mercury Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Merlin 01/13/15-1 (BH61997, BH61998, BH61999, BH62000, BH62001)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/13/2015

Instrument: Merlin 01/14/15-1 (BH61997, BH61998, BH61999)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/14/2015

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NY # 11301

RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

QC (Batch Specific)

----------- Sample No: BH58509, QA/QC Batch: 296986 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61880, QA/QC Batch: 296886 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

ICP Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Arcos 01/12/15-1 (BH61997, BH61998, BH61999)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/12/2015

Instrument: Arcos 01/13/15-1 (BH61997, BH61998, BH61999)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/13/2015

Instrument: Blue 01/13/15-1 (BH62000, BH62001)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.

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January 29, 2015

SDG I.D.: GBH61997

The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/13/2015

QC (Site Specific)

----------- Sample No: BH61997, QA/QC Batch: 296887 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

All MS recoveries were within 75 - 125 with the following exceptions: None.

All MSD recoveries were within 75 - 125 with the following exceptions: None.

All MS/MSD RPDs were less than 20% with the following exceptions: None.

QC (Batch Specific)

----------- Sample No: BH61823, QA/QC Batch: 296846 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61843, QA/QC Batch: 296847 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH62140, QA/QC Batch: 296872 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

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RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

PAH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem19 01/12/15-1 (BH61997, BH61998, BH61999)

Initial Calibration Verification (CHEM19/BN_0106):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM19/0112_04-BN_0106):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/12/2015

QC (Batch Specific)

----------- Sample No: BH61508, QA/QC Batch: 296845 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

----------- Sample No: BH61823, QA/QC Batch: 296834 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd3 01/13/15-1 (BH61997, BH61998, BH61999)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

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January 29, 2015

SDG I.D.: GBH61997

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC106AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC106BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/13/2015

Instrument: Au-ecd6 01/15/15-1 (BH63051, BH63052)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/15/2015

QC Comments: QC Batch 296755 01/09/15 (BH61997, BH61998, BH61999)

MS/MSD could not be reported for this batch due to PCBs in the unspiked sample.-aw

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January 29, 2015

SDG I.D.: GBH61997

QC (Batch Specific)

----------- Sample No: BH61796, QA/QC Batch: 296755 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH62633, QA/QC Batch: 297070 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

PEST Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd35 01/13/15-1 (BH61997, BH61998, BH61999)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.

The continuing calibration standards were within acceptance criteria except for the following compounds: NoneThe initial calibration (PS1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:
113A019 - Endrin aldehyde (-28%)
113A038 - Methoxychlor (-16%)
A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.

Printed Name Carol Eddy
Position: Chemist
Date: 1/13/2015

Instrument: Au-ecd35 01/15/15-1 (BH63051, BH63052)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.

The continuing calibration standards were within acceptance criteria except for the following compounds: NoneThe initial calibration (PS1230AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS1230BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:
115A028 - Endrin aldehyde (-17%)
A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.

Printed Name Carol Eddy
Position: Chemist
Date: 1/15/2015

QC (Batch Specific)

----------- Sample No: BH61843, QA/QC Batch: 296764 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH62633, QA/QC Batch: 297071 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

SVOASIM Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem04 01/13/15-1 (BH62000, BH62001, BH62002)

The DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.

In the event that lower detection levels were requested, the samples may have been analyzed by selective ion monitoring (SIM) mode.

If PAH/base neutral were requested, Phoenix utilized a method that contained a shortened list , so some of the compounds in the narrative may be non-applicable.Initial Calibration Verification (CHEM04/SIM_0105):
98% of target compounds met criteria.
The following compounds had %RSDs >20%: Bis(2-ethylhexyl)phthalate (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM04/0113_02-SIM_0105):

96% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: Pentachloronitrobenzene (-34%)[30%], Pentachlorophenol (-43%)[30%]
The following compounds did not meet maximum % deviations: Pentachlorophenol (-43%)[40%]
The following compounds did not meet recommended response factors: 2-chlorophenol (.740)[0.8], 2-nitrophenol (.039)[0.1], Bis(2-chloroethyl)ether (.648)[0.7]
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/13/2015

QC (Batch Specific)

----------- Sample No: BH61508, QA/QC Batch: 296845 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

VOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? No.

QC Batch 296899 (Samples: BH61998, BH61999): -----

The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. (Dichlorodifluoromethane)

Instrument: Chem03 01/12/15-1 (BH61997)

Initial Calibration Verification (CHEM03/RCPS_0108):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Trichlorofluoromethane (22%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM03/0112L04-RCPS_0108):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Jane Li
Position: Chemist
Date: 1/12/2015

Instrument: Chem17 01/12/15-1 (BH62000, BH62001, BH62003)

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January 29, 2015

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Initial Calibration Verification (CHEM17/VOA_0108):
99% of target compounds met criteria.
The following compounds had %RSDs >20%: Bromomethane (32%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM17/0112S02-VOA_0108):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name	Harry Mullin
Position:	Chemist
Date:	1/12/2015

Instrument: Chem18 01/12/15-2 (BH61998, BH61999)

Initial Calibration Verification (CHEM18/voa5g_0112):
97% of target compounds met criteria.
The following compounds had %RSDs >20%: Acetone (29%), Methylene Chloride (28%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM18/0112M18-voa5g_0112):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Continuing Calibration Verification #2 (CHEM18/0112M46-voa5g_0112):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name	Jane Li
Position:	Chemist
Date:	1/12/2015

QC Comments: QC Batch 296917 01/12/15 (BH62000, BH62001, BH62003)

A blank MS/MSD was analyzed with this batch.

RCP Certification Report

January 29, 2015

SDG I.D.: GBH61997

QC (Batch Specific)

----------- Sample No: BH61843, QA/QC Batch: 296903 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH61998, QA/QC Batch: 296899 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: Dichlorodifluoromethane(140%)

All LCSD recoveries were within 70 - 130 with the following exceptions: Dichlorodifluoromethane(145%)

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH62003, QA/QC Batch: 296917 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Temperature Narration

The samples in this delivery group were received at 6°C.
(Note acceptance criteria is above freezing up to 6°C)

PHOENIX Environmental Laboratories, Inc.

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Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

CHAIN OF CUSTODY RECORD

Temp 6 of

Data Delivery:
☐ Fax #:
☒ Email: JCuscovitch@redtechllc.com

Customer: RED Technologies LLC
Address: 10 Northwood Dr
Bloomfield CT 06002

Project: Center St Bridge
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385
Phone #: 860-218-2428
Fax #:

Client Sample - Information - Identification

Sampler's Signature ______ Date 1-9-15

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs 8260	PAHs 8270	PCBs 8082	Total RCRA 8 metals (6010 Total)	SPLP RCRA 8 metals (6010 SPLP)	Pesticides 8081B	Herbicides 8151A	Soil VOA [✓] Methanol [ ] S. Bisulfate [2] H20	GL Soil container (8) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
~~61997~~	SED-1	SE	1-9-15	0825	X	X	X	X	X	X	X	X	X	X				61997				
61998	SED-2	↓	↓	0820	X	X	X	X	X	X	X	X	X	X								
61999	SED-3	↓	↓	0810	X	X	X	X	X	X	X	X	X	X								
	~~Trip Blank~~	~~TB~~	~~—~~	~~—~~		~~X~~							~~X~~									

Relinquished by:	Accepted by:	Date:	Time:
[signature]	RED Fridge	1-9-15	1500
Red FRIDGE	[signature]	1-12-15	10:00
[signature]	[signature]	1-12-15	15:57

Comments, Special Requirements or Regulations:
* 1/13 s/w John - run ETPH & PAH only - he will resample with new chain at a later date. LA

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* SURCHARGE APPLIES

CT/RI
☐ RCP Cert.
☐ GW Protect.
☐ GA Mobility
☐ GB Mobility
☐ SW Protect.
☐ Res. Vol.
☐ Ind. Vol.
☐ Res. Criteria
☐ Other

MA
☐ MCP Cert.
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: CT

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ ASP-A
☐ NJ Reduced Deliv. *
☐ NJ Hazsite EDD
☐ Phoenix Std Report
☐ Other

Coolant: IPK ☐ ICE ☐ No ☐

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Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 6°C Pg of

Contact Options:
☐ Fax:
☐ Phone: 860-218-2428
☐ Email: JCwcevitch@redTechllc.com

Customer: RED Technologies LLC
Address: 10 Northwood Dr
Bloomfield CT 06002

Project: ~~14-385~~ (Center St Bridge)
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 1-9-15

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs 8260	PAHs 8270	PCBs 8082	Total 8 RCRA metals 6010	Pesticides 8081B	Herbicides 8151A	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz X	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is 3 HCl	GL Amber 1000ml [ ] As is 2 H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml 1	PL NaOH 250ml	Bacteria Bottle
**62000	SF-1.	SW	1-9-15	0830	X	X	X	X	X	X	X		X		X	X			X		
**62001	SF-2	SW	1-9-15	0805	X	X	X	X	X	~~X~~	X		X		X	X			X		
**62002	Field Blank	DI	1-9-15	1100	X	X	X	X	X	X	X		3FA		X	X			X		
62003	Trip Blank	TB	—	—		X									2						

Relinquished by:	Accepted by:	Date:	Time:
[signature]	RED Fridge	1-9-15	1500
RED Fridge	[signature]	1-12-15	1000
[signature]	[signature]	1-12-15	15:57

Comments, Special Requirements or Regulations:
** Emailed on Field Blank volume also [initials]

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: CT

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

lisa@phoenixlabs.com 61997

From: lisa@phoenixlabs.com
Sent: Tuesday, January 13, 2015 8:54 AM
To: 'John Cuscovitch'
Subject: Cooper St Bridge PO 14-385

Good morning,
I noticed on the sets of chains that notes are stating not enough sample volume on the surface water samples...I wasn't sure if anyone had called or emailed you last night when noticed.
Please let me know how to proceed at your earliest convenience.
Phoenix ID GBH61987 & GBH61997

Thank you,

Lisa Arnold
Client Services Representative
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102
Fx: 1-860-645-0823

From: lisa@phoenixlabs.com
Sent: Thursday, January 15, 2015 11:32 AM
To: 'John Cuscovitch'
Subject: FW: Cooper St Bridge PO 14-385

Good morning,

I forgot to mention the 2 Field Blanks would need additional sample volume as well.
Sorry for this confusion.
Thank you,
Lisa

From: lisa@phoenixlabs.com [mailto:lisa@phoenixlabs.com]
Sent: Tuesday, January 13, 2015 8:54 AM
To: 'John Cuscovitch'
Subject: Cooper St Bridge PO 14-385

Good morning,
I noticed on the sets of chains that notes are stating not enough sample volume on the surface water samples...I wasn't sure if anyone had called or emailed you last night when noticed.
Please let me know how to proceed at your earliest convenience.
Phoenix ID GBH61987 & GBH61997

Thank you,

Lisa Arnold
Client Services Representative
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102
Fx: 1-860-645-0823

lisa@phoenixlabs.com

From: John Cuscovitch [jcuscovitch@redtechllc.com]
Sent: Thursday, January 15, 2015 11:37 AM
To: lisa@phoenixlabs.com
Subject: RE: Cooper St Bridge PO 14-385

That is ok. I figured you would just run for SVOCs and ETPH for the field blanks that were submitted.

From: lisa@phoenixlabs.com [mailto:lisa@phoenixlabs.com]
Sent: Thursday, January 15, 2015 11:32 AM
To: John Cuscovitch
Subject: FW: Cooper St Bridge PO 14-385

Good morning,

I forgot to mention the 2 Field Blanks would need additional sample volume as well.
Sorry for this confusion.
Thank you,
Lisa

From: lisa@phoenixlabs.com [mailto:lisa@phoenixlabs.com]
Sent: Tuesday, January 13, 2015 8:54 AM
To: 'John Cuscovitch'
Subject: Cooper St Bridge PO 14-385

Good morning,
I noticed on the sets of chains that notes are stating not enough sample volume on the surface water samples...I wasn't sure if anyone had called or emailed you last night when noticed.
Please let me know how to proceed at your earliest convenience.
Phoenix ID GBH61987 & GBH61997

Thank you,

Lisa Arnold
Client Services Representative
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102
Fx: 1-860-645-0823

Coolant: IPK ☐ ICE ☐ No ☐

Temp (?)C Pg of

CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
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☐ Email: JCucceritch@redtechllc.com

Customer: RED Technologies LLC
Address: 10 Northwood Dr
Bloomfield CT 06002

Project: ~~14-385~~ (Center St Bridge)
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 1-9-15

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

	PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs 8260	PAHs 8270	PCBs 8082	Total 8 RCRA metals 6010	Pesticides 8081B	Herbicides 8151A	Soil VOA Vials ( ) methanol ( ) H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial (3) As is HCl	GL Amber 1000ml (1) As is	PL As is ( ) 250ml ( ) 500ml ( ) 1000ml	PL H2SO4 250ml	PL HNO3 250ml (1)	PL NaOH 250ml	Bacteria Bottle
① **	62000	SF-1	SW	1-9-15	0830	X	X	X	X	X	X	X			X	X	X			X		
① **	62001	SF-2	SW	1-9-15	0805	X	X	X	X	X	X	X			X	X	X			X		
**	62002	Field Blank	DI	1-9-15	1100	X	X	X	X	X	X	X			3	X	X			X		
	62003	Trip Blank	TB	—	—		X									2						

Relinquished by:	Accepted by:	Date:	Time:
[signature]	RED Fridge	1-9-15	1500
RED Fridge	[signature]	1-12-15	1000
[signature]	[signature]	1-12-15	15:57

Comments, Special Requirements or Regulations:

** emailed on Field Blank volume also LA

① missed total RCRA 8 metals adding 1/28 LA

24 HR TAT

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: CT

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

lisa@phoenixlabs.com 61987 / 61997

From: John Cuscovitch [jcuscovitch@redtechllc.com]
Sent: Thursday, January 22, 2015 4:07 PM
To: lisa@phoenixlabs.com
Subject: RE: Cooper and Center St Bridge

Good afternoon Lisa,

While I was going through the lab data I noticed a few things that I was wondering if you could fix?

Center St - BH61997-BH62003 sediment samples and surface water samples were combine into one lab report. They were done on separate chains.
BH63051 has the remaining surface water analysis we could not preform before. Can you please merge with BH62003 into one lab report?

Cooper St - BH61987-BH61996 sediment samples and surface water samples were combine into one lab report. They were also done on spate chains.
BH61987 SB-4 and SB-5 are labeled as SED-4 and SED-5 please change.
BH63049 has the remaining surface water analysis we could not preform before. Can you please merge with BH61996 into one lab report?

Please let me know if you have any questions.

From: lisa@phoenixlabs.com [mailto:lisa@phoenixlabs.com]
Sent: Thursday, January 15, 2015 12:29 PM
To: John Cuscovitch
Subject: Cooper and Center St Bridge

Hi John,

So, I noticed on the new chains from yesterday we are analyzing only on Surface Waters on SF-1 and SF-2

for PCBs, Herbicides & Pesticides. Did not submit samples for Field Blanks.
Our Phoenix IDs GBH63049 & 63051

After all this...I hope you have a great weekend.
Thank you,

Lisa Arnold
Client Services Representative
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102
Fx: 1-860-645-0823

Wednesday, January 28, 2015

Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Project ID: CENTER ST., BRIDGE
Sample ID#s: BH64994 - BH64996

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 28, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		01/19/15	9:30
Location Code:	REDTECH	Received by:	LB	01/20/15	14:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	14-385				

Laboratory Data

SDG ID: GBH64994
Phoenix ID: BH64994

Project ID: CENTER ST., BRIDGE
Client ID: MW-1

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Arsenic	0.006	0.004	mg/L	01/21/15	LK	SW6010
Barium	0.412	0.002	mg/L	01/21/15	LK	SW6010
Cadmium	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Chromium	0.033	0.001	mg/L	01/21/15	LK	SW6010
Mercury	< 0.0002	0.0002	mg/L	01/21/15	RS	SW7470
Lead	0.237	0.002	mg/L	01/21/15	LK	SW6010
Selenium	< 0.010	0.010	mg/L	01/21/15	LK	SW6010
Extraction of CT ETPH	Completed			01/21/15	E/D	3510/3520
Mercury Digestion	Completed			01/21/15	I/I	SW7470
Extraction for Herbicide	Completed			01/21/15	D/D	SW8151
PCB Extraction	Completed			01/20/15	L	SW3510C
Extraction for Pest (2 Liter)	Completed			01/20/15	L	SW3510
Semi-Volatile Extraction	Completed			01/20/15	E/D	SW3520
Total Metals Digestion	Completed			01/20/14	AG	SW846 - 3050
Chlorinated Herbicides						
2,4,5-T	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4,5-TP (Silvex)	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-D	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-DB	ND	13	ug/L	01/22/15	BB	SW8151
Dalapon	ND	1.3	ug/L	01/22/15	BB	SW8151
Dicamba	ND	2.5	ug/L	01/22/15	BB	SW8151
Dichloroprop	ND	1.3	ug/L	01/22/15	BB	SW8151
Dinoseb	ND	2.5	ug/L	01/22/15	BB	SW8151
QA/QC Surrogates						
% DCAA	67		%	01/22/15	BB	30 - 150 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.070	mg/L	01/22/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/22/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	74		%	01/22/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1221	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1232	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1242	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1248	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1254	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1260	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1262	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1268	ND	0.10	ug/L	01/23/15	AW	8082
QA/QC Surrogates						
% DCBP	47		%	01/23/15	AW	30 - 150 %
% TCMX	71		%	01/23/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	0.050	ug/L	01/22/15	CE	SW8081
4,4' -DDE	ND	0.050	ug/L	01/22/15	CE	SW8081
4,4' -DDT	ND	0.050	ug/L	01/22/15	CE	SW8081
a-BHC	ND	0.025	ug/L	01/22/15	CE	SW8081
Alachlor	ND	0.075	ug/L	01/22/15	CE	SW8081
Aldrin	ND	0.002	ug/L	01/22/15	CE	SW8081
b-BHC	ND	0.005	ug/L	01/22/15	CE	SW8081
Chlordane	ND	0.30	ug/L	01/22/15	CE	SW8081
d-BHC	ND	0.025	ug/L	01/22/15	CE	SW8081
Dieldrin	ND	0.002	ug/L	01/22/15	CE	SW8081
Endosulfan I	ND	0.050	ug/L	01/22/15	CE	SW8081
Endosulfan II	ND	0.050	ug/L	01/22/15	CE	SW8081
Endosulfan Sulfate	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin Aldehyde	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin ketone	ND	0.050	ug/L	01/22/15	CE	SW8081
g-BHC (Lindane)	ND	0.025	ug/L	01/22/15	CE	SW8081
Heptachlor	ND	0.025	ug/L	01/22/15	CE	SW8081
Heptachlor epoxide	ND	0.025	ug/L	01/22/15	CE	SW8081
Methoxychlor	ND	0.10	ug/L	01/22/15	CE	SW8081
Toxaphene	ND	1.0	ug/L	01/22/15	CE	SW8081
QA/QC Surrogates						
%DCBP (Surrogate Rec)	49		%	01/22/15	CE	30 - 150 %
%TCMX (Surrogate Rec)	85		%	01/22/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: MW-1

Phoenix I.D.: BH64994

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/21/15	MH	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/21/15	MH	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Hexanone	ND	5.0	ug/L	01/21/15	MH	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/21/15	MH	SW8260
Acetone	ND	25	ug/L	01/21/15	MH	SW8260
Acrylonitrile	ND	5.0	ug/L	01/21/15	MH	SW8260
Benzene	ND	0.70	ug/L	01/21/15	MH	SW8260
Bromobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromochloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Bromoform	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/21/15	MH	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Chlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroform	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
cis-1,2-Dichloroethene	1.4	1.0	ug/L	01/21/15	MH	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Dibromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Ethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/21/15	MH	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
m&p-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/21/15	MH	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/21/15	MH	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Methylene chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Naphthalene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
o-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Styrene	ND	1.0	ug/L	01/21/15	MH	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrahydrofuran (THF)	ND	2.5	ug/L	01/21/15	MH	SW8260
Toluene	ND	1.0	ug/L	01/21/15	MH	SW8260
Total Xylenes	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/21/15	MH	SW8260
Trichloroethene	96	10	ug/L	01/21/15	MH	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Vinyl chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	103		%	01/21/15	MH	70 - 130 %
% Bromofluorobenzene	96		%	01/21/15	MH	70 - 130 %
% Dibromofluoromethane	111		%	01/21/15	MH	70 - 130 %
% Toluene-d8	102		%	01/21/15	MH	70 - 130 %

Semivolatiles by SIM

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Anthracene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benz(a)anthracene	0.07	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(a)pyrene	0.05	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(b)fluoranthene	0.07	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benzo(k)fluoranthene	0.04	0.02	ug/L	01/21/15	DD	8270(SIM)
Chrysene	0.07	0.02	ug/L	01/21/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/21/15	DD	8270(SIM)
Fluoranthene	0.16	0.10	ug/L	01/21/15	DD	8270(SIM)
Fluorene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	0.03	0.02	ug/L	01/21/15	DD	8270(SIM)
Naphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Phenanthrene	0.09	0.07	ug/L	01/21/15	DD	8270(SIM)
Pyrene	0.14	0.10	ug/L	01/21/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	78		%	01/21/15	DD	30 - 130 %
% Nitrobenzene-d5	75		%	01/21/15	DD	30 - 130 %
% Terphenyl-d14	75		%	01/21/15	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 28, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 28, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		01/19/15	10:10
Location Code:	REDTECH	Received by:	LB	01/20/15	14:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBH64994
Phoenix ID: BH64995

Project ID: CENTER ST., BRIDGE
Client ID: MW-2

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Arsenic	< 0.004	0.004	mg/L	01/21/15	LK	SW6010
Barium	0.167	0.002	mg/L	01/21/15	LK	SW6010
Cadmium	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Chromium	0.002	0.001	mg/L	01/21/15	LK	SW6010
Mercury	< 0.0002	0.0002	mg/L	01/21/15	RS	SW7470
Lead	0.003	0.002	mg/L	01/21/15	LK	SW6010
Selenium	< 0.010	0.010	mg/L	01/21/15	LK	SW6010
Extraction of CT ETPH	Completed			01/21/15	E/D	3510/3520
Mercury Digestion	Completed			01/21/15	I/I	SW7470
Extraction for Herbicide	Completed			01/21/15	D/D	SW8151
PCB Extraction	Completed			01/20/15	L	SW3510C
Extraction for Pest (2 Liter)	Completed			01/20/15	L	SW3510
Semi-Volatile Extraction	Completed			01/20/15	E/D	SW3520
Total Metals Digestion	Completed			01/20/14	AG	SW846 - 3050
Chlorinated Herbicides						
2,4,5-T	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4,5-TP (Silvex)	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-D	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-DB	ND	13	ug/L	01/22/15	BB	SW8151
Dalapon	ND	1.3	ug/L	01/22/15	BB	SW8151
Dicamba	ND	2.5	ug/L	01/22/15	BB	SW8151
Dichloroprop	ND	1.3	ug/L	01/22/15	BB	SW8151
Dinoseb	ND	2.5	ug/L	01/22/15	BB	SW8151
QA/QC Surrogates						
% DCAA	71		%	01/22/15	BB	30 - 150 %

Project ID: CENTER ST., BRIDGE
Client ID: MW-2

Phoenix I.D.: BH64995

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.070	mg/L	01/22/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/22/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	79		%	01/22/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1221	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1232	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1242	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1248	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1254	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1260	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1262	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1268	ND	0.10	ug/L	01/23/15	AW	8082
QA/QC Surrogates						
% DCBP	70		%	01/23/15	AW	30 - 150 %
% TCMX	59		%	01/23/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	0.050	ug/L	01/22/15	CE	SW8081
4,4' -DDE	ND	0.050	ug/L	01/22/15	CE	SW8081
4,4' -DDT	ND	0.050	ug/L	01/22/15	CE	SW8081
a-BHC	ND	0.025	ug/L	01/22/15	CE	SW8081
Alachlor	ND	0.075	ug/L	01/22/15	CE	SW8081
Aldrin	ND	0.002	ug/L	01/22/15	CE	SW8081
b-BHC	ND	0.005	ug/L	01/22/15	CE	SW8081
Chlordane	ND	0.30	ug/L	01/22/15	CE	SW8081
d-BHC	ND	0.025	ug/L	01/22/15	CE	SW8081
Dieldrin	ND	0.002	ug/L	01/22/15	CE	SW8081
Endosulfan I	ND	0.050	ug/L	01/22/15	CE	SW8081
Endosulfan II	ND	0.050	ug/L	01/22/15	CE	SW8081
Endosulfan Sulfate	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin Aldehyde	ND	0.050	ug/L	01/22/15	CE	SW8081
Endrin ketone	ND	0.050	ug/L	01/22/15	CE	SW8081
g-BHC (Lindane)	ND	0.025	ug/L	01/22/15	CE	SW8081
Heptachlor	ND	0.025	ug/L	01/22/15	CE	SW8081
Heptachlor epoxide	ND	0.025	ug/L	01/22/15	CE	SW8081
Methoxychlor	ND	0.10	ug/L	01/22/15	CE	SW8081
Toxaphene	ND	1.0	ug/L	01/22/15	CE	SW8081
QA/QC Surrogates						
%DCBP (Surrogate Rec)	76		%	01/22/15	CE	30 - 150 %
%TCMX (Surrogate Rec)	72		%	01/22/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: MW-2

Phoenix I.D.: BH64995

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/21/15	MH	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/21/15	MH	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Hexanone	ND	5.0	ug/L	01/21/15	MH	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/21/15	MH	SW8260
Acetone	ND	25	ug/L	01/21/15	MH	SW8260
Acrylonitrile	ND	5.0	ug/L	01/21/15	MH	SW8260
Benzene	ND	0.70	ug/L	01/21/15	MH	SW8260
Bromobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromochloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Bromoform	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/21/15	MH	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Chlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroform	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
cis-1,2-Dichloroethene	1.4	1.0	ug/L	01/21/15	MH	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Dibromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Ethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/21/15	MH	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
m&p-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/21/15	MH	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/21/15	MH	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Methylene chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Naphthalene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
o-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Styrene	ND	1.0	ug/L	01/21/15	MH	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrahydrofuran (THF)	ND	2.5	ug/L	01/21/15	MH	SW8260
Toluene	ND	1.0	ug/L	01/21/15	MH	SW8260
Total Xylenes	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/21/15	MH	SW8260
Trichloroethene	210	20	ug/L	01/21/15	MH	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Vinyl chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	103		%	01/21/15	MH	70 - 130 %
% Bromofluorobenzene	98		%	01/21/15	MH	70 - 130 %
% Dibromofluoromethane	106		%	01/21/15	MH	70 - 130 %
% Toluene-d8	104		%	01/21/15	MH	70 - 130 %

Semivolatiles by SIM

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Anthracene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benz(a)anthracene	0.03	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(a)pyrene	ND	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	01/21/15	DD	8270(SIM)
Chrysene	0.02	0.02	ug/L	01/21/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/21/15	DD	8270(SIM)
Fluoranthene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Fluorene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	01/21/15	DD	8270(SIM)
Naphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Phenanthrene	ND	0.07	ug/L	01/21/15	DD	8270(SIM)
Pyrene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	74		%	01/21/15	DD	30 - 130 %
% Nitrobenzene-d5	73		%	01/21/15	DD	30 - 130 %
% Terphenyl-d14	83		%	01/21/15	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
January 28, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 28, 2015

FOR: Attn: Mr. Todd Mahler
Red Technologies, LLC
10 Northwood Drive
Bloomfield, CT 06002

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		01/19/15	10:30
Location Code:	REDTECH	Received by:	LB	01/20/15	14:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBH64994
Phoenix ID: BH64996

Project ID: CENTER ST., BRIDGE
Client ID: MW-3

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Arsenic	< 0.004	0.004	mg/L	01/21/15	LK	SW6010
Barium	0.174	0.002	mg/L	01/21/15	LK	SW6010
Cadmium	< 0.001	0.001	mg/L	01/21/15	LK	SW6010
Chromium	0.006	0.001	mg/L	01/21/15	LK	SW6010
Mercury	< 0.0002	0.0002	mg/L	01/21/15	RS	SW7470
Lead	0.013	0.002	mg/L	01/21/15	LK	SW6010
Selenium	< 0.010	0.010	mg/L	01/21/15	LK	SW6010
Extraction of CT ETPH	Completed			01/21/15	E/D	3510/3520
Mercury Digestion	Completed			01/21/15	I/I	SW7470
Extraction for Herbicide	Completed			01/21/15	D/D	SW8151
PCB Extraction	Completed			01/20/15	L	SW3510C
Extraction for Pest (2 Liter)	Completed			01/20/15	L	SW3510
Semi-Volatile Extraction	Completed			01/20/15	E/D	SW3520
Total Metals Digestion	Completed			01/20/14	AG	SW846 - 3050
Chlorinated Herbicides						
2,4,5-T	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4,5-TP (Silvex)	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-D	ND	1.3	ug/L	01/22/15	BB	SW8151
2,4-DB	ND	13	ug/L	01/22/15	BB	SW8151
Dalapon	ND	1.3	ug/L	01/22/15	BB	SW8151
Dicamba	ND	2.5	ug/L	01/22/15	BB	SW8151
Dichloroprop	ND	1.3	ug/L	01/22/15	BB	SW8151
Dinoseb	ND	2.5	ug/L	01/22/15	BB	SW8151
QA/QC Surrogates						
% DCAA	57		%	01/22/15	BB	30 - 150 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
TPH by GC (Extractable Products)						
Ext. Petroleum HC	ND	0.070	mg/L	01/22/15	JRB	CTETPH/8015D
Identification	ND		mg/L	01/22/15	JRB	CTETPH/8015D
QA/QC Surrogates						
% n-Pentacosane	75		%	01/22/15	JRB	50 - 150 %
Polychlorinated Biphenyls						
PCB-1016	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1221	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1232	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1242	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1248	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1254	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1260	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1262	ND	0.10	ug/L	01/23/15	AW	8082
PCB-1268	ND	0.10	ug/L	01/23/15	AW	8082
QA/QC Surrogates						
% DCBP	45		%	01/23/15	AW	30 - 150 %
% TCMX	71		%	01/23/15	AW	30 - 150 %
Pesticides						
4,4' -DDD	ND	0.050	ug/L	01/23/15	CE	SW8081
4,4' -DDE	ND	0.050	ug/L	01/23/15	CE	SW8081
4,4' -DDT	ND	0.050	ug/L	01/23/15	CE	SW8081
a-BHC	ND	0.025	ug/L	01/23/15	CE	SW8081
Alachlor	ND	0.075	ug/L	01/23/15	CE	SW8081
Aldrin	ND	0.002	ug/L	01/23/15	CE	SW8081
b-BHC	ND	0.005	ug/L	01/23/15	CE	SW8081
Chlordane	ND	0.30	ug/L	01/23/15	CE	SW8081
d-BHC	ND	0.025	ug/L	01/23/15	CE	SW8081
Dieldrin	ND	0.002	ug/L	01/23/15	CE	SW8081
Endosulfan I	ND	0.050	ug/L	01/23/15	CE	SW8081
Endosulfan II	ND	0.050	ug/L	01/23/15	CE	SW8081
Endosulfan Sulfate	ND	0.050	ug/L	01/23/15	CE	SW8081
Endrin	ND	0.050	ug/L	01/23/15	CE	SW8081
Endrin Aldehyde	ND	0.050	ug/L	01/23/15	CE	SW8081
Endrin ketone	ND	0.050	ug/L	01/23/15	CE	SW8081
g-BHC (Lindane)	ND	0.025	ug/L	01/23/15	CE	SW8081
Heptachlor	ND	0.025	ug/L	01/23/15	CE	SW8081
Heptachlor epoxide	ND	0.025	ug/L	01/23/15	CE	SW8081
Methoxychlor	ND	0.10	ug/L	01/23/15	CE	SW8081
Toxaphene	ND	1.0	ug/L	01/23/15	CE	SW8081
QA/QC Surrogates						
%DCBP (Surrogate Rec)	42		%	01/23/15	CE	30 - 150 %
%TCMX (Surrogate Rec)	81		%	01/23/15	CE	30 - 150 %
Volatiles						
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1,1-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	01/21/15	MH	SW8260
1,1,2-Trichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,1-Dichloropropene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,3-Trichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2,4-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dibromoethane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,2-Dichloroethane	ND	0.60	ug/L	01/21/15	MH	SW8260
1,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3,5-Trimethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
1,3-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
1,4-Dichlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
2,2-Dichloropropane	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
2-Hexanone	ND	5.0	ug/L	01/21/15	MH	SW8260
2-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Chlorotoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
4-Methyl-2-pentanone	ND	5.0	ug/L	01/21/15	MH	SW8260
Acetone	ND	25	ug/L	01/21/15	MH	SW8260
Acrylonitrile	ND	5.0	ug/L	01/21/15	MH	SW8260
Benzene	ND	0.70	ug/L	01/21/15	MH	SW8260
Bromobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromochloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromodichloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Bromoform	ND	1.0	ug/L	01/21/15	MH	SW8260
Bromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Carbon Disulfide	ND	5.0	ug/L	01/21/15	MH	SW8260
Carbon tetrachloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Chlorobenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloroform	ND	1.0	ug/L	01/21/15	MH	SW8260
Chloromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
cis-1,2-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
cis-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
Dibromochloromethane	ND	0.50	ug/L	01/21/15	MH	SW8260
Dibromomethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Dichlorodifluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Ethylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Hexachlorobutadiene	ND	0.40	ug/L	01/21/15	MH	SW8260
Isopropylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
m&p-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
Methyl ethyl ketone	ND	5.0	ug/L	01/21/15	MH	SW8260
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	01/21/15	MH	SW8260

Project ID: CENTER ST., BRIDGE
Client ID: MW-3

Phoenix I.D.: BH64996

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
Methylene chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
Naphthalene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
n-Propylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
o-Xylene	ND	1.0	ug/L	01/21/15	MH	SW8260
p-Isopropyltoluene	ND	1.0	ug/L	01/21/15	MH	SW8260
sec-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Styrene	ND	1.0	ug/L	01/21/15	MH	SW8260
tert-Butylbenzene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrachloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
Tetrahydrofuran (THF)	ND	2.5	ug/L	01/21/15	MH	SW8260
Toluene	ND	1.0	ug/L	01/21/15	MH	SW8260
Total Xylenes	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,2-Dichloroethene	ND	1.0	ug/L	01/21/15	MH	SW8260
trans-1,3-Dichloropropene	ND	0.40	ug/L	01/21/15	MH	SW8260
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	01/21/15	MH	SW8260
Trichloroethene	24	1.0	ug/L	01/21/15	MH	SW8260
Trichlorofluoromethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Trichlorotrifluoroethane	ND	1.0	ug/L	01/21/15	MH	SW8260
Vinyl chloride	ND	1.0	ug/L	01/21/15	MH	SW8260
QA/QC Surrogates						
% 1,2-dichlorobenzene-d4	102		%	01/21/15	MH	70 - 130 %
% Bromofluorobenzene	99		%	01/21/15	MH	70 - 130 %
% Dibromofluoromethane	110		%	01/21/15	MH	70 - 130 %
% Toluene-d8	100		%	01/21/15	MH	70 - 130 %

Semivolatiles by SIM

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference
2-Methylnaphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Acenaphthylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Anthracene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benz(a)anthracene	0.05	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(a)pyrene	0.03	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(b)fluoranthene	0.05	0.02	ug/L	01/21/15	DD	8270(SIM)
Benzo(ghi)perylene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Benzo(k)fluoranthene	0.02	0.02	ug/L	01/21/15	DD	8270(SIM)
Chrysene	0.04	0.02	ug/L	01/21/15	DD	8270(SIM)
Dibenz(a,h)anthracene	ND	0.01	ug/L	01/21/15	DD	8270(SIM)
Fluoranthene	0.17	0.10	ug/L	01/21/15	DD	8270(SIM)
Fluorene	0.10	0.10	ug/L	01/21/15	DD	8270(SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	01/21/15	DD	8270(SIM)
Naphthalene	ND	0.10	ug/L	01/21/15	DD	8270(SIM)
Phenanthrene	0.31	0.07	ug/L	01/21/15	DD	8270(SIM)
Pyrene	0.16	0.10	ug/L	01/21/15	DD	8270(SIM)
QA/QC Surrogates						
% 2-Fluorobiphenyl	74		%	01/21/15	DD	30 - 130 %
% Nitrobenzene-d5	64		%	01/21/15	DD	30 - 130 %
% Terphenyl-d14	84		%	01/21/15	DD	30 - 130 %

Parameter	Result	RL/ PQL	Units	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected   BRL=Below Reporting Level

Comments:

Pesticide Comment:
Due to a matrix interference and/or the presence of a large amount of non-target material in the sample, an elevated RL was reported.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 28, 2015
Reviewed and Released by: Ethan Lee, Project Manager

PHOENIX

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QA/QC Report

January 28, 2015

QA/QC Data

SDG I.D.: GBH64994

Parameter	Blank	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 297610, QC Sample No: BH61030 (BH64994, BH64995, BH64996)												
Mercury - Water	BRL	<0.0002	<0.0002	NC	116	107	8.1	106	101	4.8	70 - 130	20
Comment:												
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.												
QA/QC Batch 297492, QC Sample No: BH62498 (BH64994, BH64995, BH64996)												
ICP Metals - Aqueous												
Arsenic	BRL	<0.004	<0.004	NC	96.4	96.4	0.0	96.7	96.5	0.2	75 - 125	20
Barium	BRL	0.019	0.019	0	101	99.7	1.3	102	101	1.0	75 - 125	20
Cadmium	BRL	<0.001	<0.001	NC	99.0	98.1	0.9	99.4	98.9	0.5	75 - 125	20
Chromium	BRL	<0.001	<0.001	NC	97.8	96.9	0.9	98.2	97.5	0.7	75 - 125	20
Lead	BRL	<0.002	<0.002	NC	96.3	95.7	0.6	96.5	95.9	0.6	75 - 125	20
Selenium	BRL	<0.010	<0.010	NC	92.9	93.8	1.0	94.2	93.5	0.7	75 - 125	20
Silver	BRL	<0.001	<0.001	NC	96.2	95.4	0.8	96.8	96.1	0.7	75 - 125	20

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QA/QC Report

January 28, 2015

QA/QC Data

SDG I.D.: GBH64994

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 297240, QC Sample No: BH63049 (BH64994, BH64995, BH64996)									
Chlorinated Herbicides - Ground Water									
2,4,5-T	ND	89	86	3.4				40 - 140	20
2,4,5-TP (Silvex)	ND	86	81	6.0				40 - 140	20
2,4-D	ND	89	102	13.6				40 - 140	20
2,4-DB	ND	81	75	7.7				40 - 140	20
Dalapon	ND	82	79	3.7				40 - 140	20
Dicamba	ND	88	84	4.7				40 - 140	20
Dichloroprop	ND	81	79	2.5				40 - 140	20
Dinoseb	ND	88	80	9.5				40 - 140	20
% DCAA (Surrogate Rec)	89	79	77	2.6				30 - 150	20
QA/QC Batch 297483, QC Sample No: BH64614 (BH64994, BH64995, BH64996)									
Pesticides - Ground Water									
4,4' -DDD	ND	79	78	1.3				40 - 140	20
4,4' -DDE	ND	79	78	1.3				40 - 140	20
4,4' -DDT	ND	85	84	1.2				40 - 140	20
a-BHC	ND	93	90	3.3				40 - 140	20
a-Chlordane	ND	84	83	1.2				40 - 140	20
Alachlor	ND	NA	NA	NC				40 - 140	20
Aldrin	ND	80	77	3.8				40 - 140	20
b-BHC	ND	97	95	2.1				40 - 140	20
Chlordane	ND	84	82	2.4				40 - 140	20
d-BHC	ND	82	79	3.7				40 - 140	20
Dieldrin	ND	85	83	2.4				40 - 140	20
Endosulfan I	ND	91	89	2.2				40 - 140	20
Endosulfan II	ND	88	87	1.1				40 - 140	20
Endosulfan sulfate	ND	80	78	2.5				40 - 140	20
Endrin	ND	90	89	1.1				40 - 140	20
Endrin aldehyde	ND	97	97	0.0				40 - 140	20
Endrin ketone	ND	80	76	5.1				40 - 140	20
g-BHC	ND	106	99	6.8				40 - 140	20
g-Chlordane	ND	84	82	2.4				40 - 140	20
Heptachlor	ND	86	82	4.8				40 - 140	20
Heptachlor epoxide	ND	91	90	1.1				40 - 140	20
Methoxychlor	ND	86	85	1.2				40 - 140	20
Toxaphene	ND	NA	NA	NC				40 - 140	20
% DCBP	31	71	74	4.1				40 - 150	20
% TCMX	105	103	97	6.0				40 - 150	20

Comment:

A LCS and LCS duplicate were performed instead of a MS and MSD. Alpha and gamma chlordane were spiked and analyzed instead of technical chlordane. Gamma chlordane recovery is reported as chlordane in the LCS and LCSD

QA/QC Data

SDG I.D.: GBH64994

QA/QC Batch 297484, QC Sample No: BH64614 (BH64994, BH64995, BH64996)

Polychlorinated Biphenyls - Ground Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
PCB-1016	ND	94	94	0.0				40 - 140	20
PCB-1221	ND							40 - 140	20
PCB-1232	ND							40 - 140	20
PCB-1242	ND							40 - 140	20
PCB-1248	ND							40 - 140	20
PCB-1254	ND							40 - 140	20
PCB-1260	ND	99	100	1.0				40 - 140	20
PCB-1262	ND							40 - 140	20
PCB-1268	ND							40 - 140	20
% DCBP (Surrogate Rec)	39	73	67	8.6				30 - 150	20
% TCMX (Surrogate Rec)	90	85	86	1.2				30 - 150	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

QA/QC Batch 297572, QC Sample No: BH64983 (BH64994, BH64995, BH64996)

Polynuclear Aromatic HC - Ground Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
2-Methylnaphthalene	ND	62	63	1.6				30 - 130	20
Acenaphthene	ND	69	70	1.4				30 - 130	20
Acenaphthylene	ND	82	81	1.2				30 - 130	20
Anthracene	ND	72	72	0.0				30 - 130	20
Benz(a)anthracene	ND	74	74	0.0				30 - 130	20
Benzo(a)pyrene	ND	72	72	0.0				30 - 130	20
Benzo(b)fluoranthene	ND	77	76	1.3				30 - 130	20
Benzo(ghi)perylene	ND	60	63	4.9				30 - 130	20
Benzo(k)fluoranthene	ND	103	98	5.0				30 - 130	20
Chrysene	ND	76	77	1.3				30 - 130	20
Dibenz(a,h)anthracene	ND	63	66	4.7				30 - 130	20
Fluoranthene	ND	82	78	5.0				30 - 130	20
Fluorene	ND	71	72	1.4				30 - 130	20
Indeno(1,2,3-cd)pyrene	ND	62	65	4.7				30 - 130	20
Naphthalene	ND	64	64	0.0				30 - 130	20
Phenanthrene	ND	75	75	0.0				30 - 130	20
Pyrene	ND	87	81	7.1				30 - 130	20
% 2-Fluorobiphenyl	66	70	69	1.4				30 - 130	20
% Nitrobenzene-d5	69	56	57	1.8				30 - 130	20
% Terphenyl-d14	74	92	85	7.9				30 - 130	20

Comment:

Additional 8270 criteria:20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 297686, QC Sample No: BH64992 (BH64994, BH64995, BH64996)

TPH by GC (Extractable Products) - Ground Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Ext. Petroleum HC	ND	60	59	1.7				60 - 120	30
% n-Pentacosane	99	83	75	10.1				50 - 150	20

QA/QC Batch 297755, QC Sample No: BH64996 (BH64994 (10X) , BH64995 (20X) , BH64996)

Volatiles - Ground Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1,2-Tetrachloroethane	ND	96	99	3.1	92	95	3.2	70 - 130	30
1,1,1-Trichloroethane	ND	107	109	1.9	112	114	1.8	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	92	92	0.0	80	80	0.0	70 - 130	30
1,1,2-Trichloroethane	ND	93	91	2.2	93	92	1.1	70 - 130	30

QA/QC Data

SDG I.D.: GBH64994

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
1,1-Dichloroethane	ND	96	96	0.0	96	96	0.0	70 - 130	30	
1,1-Dichloroethene	ND	103	106	2.9	101	109	7.6	70 - 130	30	
1,1-Dichloropropene	ND	88	90	2.2	82	85	3.6	70 - 130	30	
1,2,3-Trichlorobenzene	ND	92	92	0.0	85	87	2.3	70 - 130	30	
1,2,3-Trichloropropane	ND	95	95	0.0	90	88	2.2	70 - 130	30	
1,2,4-Trichlorobenzene	ND	94	90	4.3	86	85	1.2	70 - 130	30	
1,2,4-Trimethylbenzene	ND	89	89	0.0	86	87	1.2	70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	95	82	14.7	83	84	1.2	70 - 130	30	
1,2-Dibromoethane	ND	96	96	0.0	92	91	1.1	70 - 130	30	
1,2-Dichlorobenzene	ND	91	91	0.0	87	87	0.0	70 - 130	30	
1,2-Dichloroethane	ND	108	108	0.0	122	121	0.8	70 - 130	30	
1,2-Dichloropropane	ND	91	92	1.1	87	88	1.1	70 - 130	30	
1,3,5-Trimethylbenzene	ND	93	93	0.0	84	85	1.2	70 - 130	30	
1,3-Dichlorobenzene	ND	91	91	0.0	84	85	1.2	70 - 130	30	
1,3-Dichloropropane	ND	94	93	1.1	89	88	1.1	70 - 130	30	
1,4-Dichlorobenzene	ND	91	90	1.1	86	86	0.0	70 - 130	30	
2,2-Dichloropropane	ND	108	107	0.9	100	100	0.0	70 - 130	30	
2-Chlorotoluene	ND	89	91	2.2	82	81	1.2	70 - 130	30	
2-Hexanone	ND	75	73	2.7	78	79	1.3	70 - 130	30	
2-Isopropyltoluene	ND	92	92	0.0	85	86	1.2	70 - 130	30	
4-Chlorotoluene	ND	87	90	3.4	82	82	0.0	70 - 130	30	
4-Methyl-2-pentanone	ND	89	90	1.1	99	98	1.0	70 - 130	30	
Acetone	ND	90	86	4.5	93	96	3.2	70 - 130	30	
Acrylonitrile	ND	88	91	3.4	87	93	6.7	70 - 130	30	
Benzene	ND	89	91	2.2	83	85	2.4	70 - 130	30	
Bromobenzene	ND	92	93	1.1	83	82	1.2	70 - 130	30	
Bromochloromethane	ND	95	94	1.1	91	92	1.1	70 - 130	30	
Bromodichloromethane	ND	104	104	0.0	104	105	1.0	70 - 130	30	
Bromoform	ND	101	104	2.9	96	103	7.0	70 - 130	30	
Bromomethane	ND	133	138	3.7	105	130	21.3	70 - 130	30	l
Carbon Disulfide	ND	105	106	0.9	98	107	8.8	70 - 130	30	
Carbon tetrachloride	ND	102	105	2.9	108	112	3.6	70 - 130	30	
Chlorobenzene	ND	90	92	2.2	86	89	3.4	70 - 130	30	
Chloroethane	ND	109	112	2.7	103	116	11.9	70 - 130	30	
Chloroform	ND	103	100	3.0	102	101	1.0	70 - 130	30	
Chloromethane	ND	100	101	1.0	99	106	6.8	70 - 130	30	
cis-1,2-Dichloroethene	ND	92	95	3.2	87	89	2.3	70 - 130	30	
cis-1,3-Dichloropropene	ND	96	97	1.0	90	89	1.1	70 - 130	30	
Dibromochloromethane	ND	102	99	3.0	96	100	4.1	70 - 130	30	
Dibromomethane	ND	96	93	3.2	98	94	4.2	70 - 130	30	
Dichlorodifluoromethane	ND	124	135	8.5	129	133	3.1	70 - 130	30	l,m
Ethylbenzene	ND	94	93	1.1	86	88	2.3	70 - 130	30	
Hexachlorobutadiene	ND	95	96	1.0	88	88	0.0	70 - 130	30	
Isopropylbenzene	ND	86	90	4.5	80	80	0.0	70 - 130	30	
m&p-Xylene	ND	92	94	2.2	86	89	3.4	70 - 130	30	
Methyl ethyl ketone	ND	83	79	4.9	97	90	7.5	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	99	99	0.0	96	94	2.1	70 - 130	30	
Methylene chloride	ND	88	93	5.5	85	86	1.2	70 - 130	30	
Naphthalene	ND	91	88	3.4	82	83	1.2	70 - 130	30	
n-Butylbenzene	ND	89	91	2.2	85	86	1.2	70 - 130	30	
n-Propylbenzene	ND	83	85	2.4	80	81	1.2	70 - 130	30	
o-Xylene	ND	92	94	2.2	87	89	2.3	70 - 130	30	
p-Isopropyltoluene	ND	91	92	1.1	84	86	2.4	70 - 130	30	

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
sec-Butylbenzene	ND	91	92	1.1	82	83	1.2	70 - 130	30	
Styrene	ND	94	95	1.1	88	90	2.2	70 - 130	30	
tert-Butylbenzene	ND	89	90	1.1	83	85	2.4	70 - 130	30	
Tetrachloroethene	ND	90	93	3.3	86	89	3.4	70 - 130	30	
Tetrahydrofuran (THF)	ND	98	93	5.2	90	94	4.3	70 - 130	30	
Toluene	ND	91	93	2.2	87	87	0.0	70 - 130	30	
trans-1,2-Dichloroethene	ND	94	95	1.1	85	86	1.2	70 - 130	30	
trans-1,3-Dichloropropene	ND	107	105	1.9	100	100	0.0	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	90	89	1.1	79	78	1.3	70 - 130	30	
Trichloroethene	ND	92	95	3.2	89	89	0.0	70 - 130	30	
Trichlorofluoromethane	ND	121	123	1.6	139	145	4.2	70 - 130	30	m
Trichlorotrifluoroethane	ND	112	115	2.6	107	117	8.9	70 - 130	30	
Vinyl chloride	ND	98	101	3.0	100	113	12.2	70 - 130	30	
% 1,2-dichlorobenzene-d4	101	101	101	0.0	103	101	2.0	70 - 130	30	
% Bromofluorobenzene	100	103	103	0.0	106	107	0.9	70 - 130	30	
% Dibromofluoromethane	99	105	106	0.9	112	111	0.9	70 - 130	30	
% Toluene-d8	102	100	101	1.0	101	102	1.0	70 - 130	30	

Comment:

A blank MS/MSD was analyzed with this batch.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 297657, QC Sample No: BH65081 (BH64994, BH64995, BH64996)

Volatiles - Ground Water

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,1,1,2-Tetrachloroethane	ND	94	106	12.0	99	101	2.0	70 - 130	30
1,1,1-Trichloroethane	ND	95	110	14.6	110	113	2.7	70 - 130	30
1,1,2,2-Tetrachloroethane	ND	96	111	14.5	97	95	2.1	70 - 130	30
1,1,2-Trichloroethane	ND	91	103	12.4	101	100	1.0	70 - 130	30
1,1-Dichloroethane	ND	94	102	8.2	101	103	2.0	70 - 130	30
1,1-Dichloroethene	ND	99	113	13.2	102	110	7.5	70 - 130	30
1,1-Dichloropropene	ND	95	106	10.9	94	100	6.2	70 - 130	30
1,2,3-Trichlorobenzene	ND	84	100	17.4	97	99	2.0	70 - 130	30
1,2,3-Trichloropropane	ND	96	106	9.9	98	100	2.0	70 - 130	30
1,2,4-Trichlorobenzene	ND	89	103	14.6	96	98	2.1	70 - 130	30
1,2,4-Trimethylbenzene	ND	93	103	10.2	96	101	5.1	70 - 130	30
1,2-Dibromo-3-chloropropane	ND	90	103	13.5	94	97	3.1	70 - 130	30
1,2-Dibromoethane	ND	92	105	13.2	104	101	2.9	70 - 130	30
1,2-Dichlorobenzene	ND	93	103	10.2	97	99	2.0	70 - 130	30
1,2-Dichloroethane	ND	90	104	14.4	109	112	2.7	70 - 130	30
1,2-Dichloropropane	ND	91	105	14.3	98	98	0.0	70 - 130	30
1,3,5-Trimethylbenzene	ND	98	107	8.8	95	101	6.1	70 - 130	30
1,3-Dichlorobenzene	ND	94	104	10.1	96	100	4.1	70 - 130	30
1,3-Dichloropropane	ND	93	106	13.1	99	97	2.0	70 - 130	30
1,4-Dichlorobenzene	ND	92	102	10.3	95	99	4.1	70 - 130	30
2,2-Dichloropropane	ND	99	112	12.3	82	84	2.4	70 - 130	30
2-Chlorotoluene	ND	97	106	8.9	95	99	4.1	70 - 130	30
2-Hexanone	ND	72	81	11.8	86	85	1.2	70 - 130	30
2-Isopropyltoluene	ND	97	107	9.8	96	101	5.1	70 - 130	30
4-Chlorotoluene	ND	95	103	8.1	94	98	4.2	70 - 130	30
4-Methyl-2-pentanone	ND	84	99	16.4	103	101	2.0	70 - 130	30
Acetone	ND	81	89	9.4	102	92	10.3	70 - 130	30
Acrylonitrile	ND	88	106	18.6	103	97	6.0	70 - 130	30
Benzene	ND	95	107	11.9	96	98	2.1	70 - 130	30
Bromobenzene	ND	96	106	9.9	97	99	2.0	70 - 130	30

QA/QC Data

SDG I.D.: GBH64994

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bromochloromethane	ND	91	107	16.2	103	101	2.0	70 - 130	30	
Bromodichloromethane	ND	94	112	17.5	107	106	0.9	70 - 130	30	
Bromoform	ND	97	113	15.2	104	105	1.0	70 - 130	30	
Bromomethane	ND	121	141	15.3	107	126	16.3	70 - 130	30	l
Carbon Disulfide	ND	103	114	10.1	102	106	3.8	70 - 130	30	
Carbon tetrachloride	ND	96	107	10.8	104	109	4.7	70 - 130	30	
Chlorobenzene	ND	92	103	11.3	96	99	3.1	70 - 130	30	
Chloroethane	ND	107	117	8.9	105	112	6.5	70 - 130	30	
Chloroform	ND	92	108	16.0	107	106	0.9	70 - 130	30	
Chloromethane	ND	98	112	13.3	101	104	2.9	70 - 130	30	
cis-1,2-Dichloroethene	ND	94	107	12.9	103	102	1.0	70 - 130	30	
cis-1,3-Dichloropropene	ND	93	108	14.9	95	96	1.0	70 - 130	30	
Dibromochloromethane	ND	94	112	17.5	103	105	1.9	70 - 130	30	
Dibromomethane	ND	92	107	15.1	104	101	2.9	70 - 130	30	
Dichlorodifluoromethane	ND	117	137	15.7	106	111	4.6	70 - 130	30	l
Ethylbenzene	ND	97	108	10.7	96	101	5.1	70 - 130	30	
Hexachlorobutadiene	ND	93	104	11.2	93	97	4.2	70 - 130	30	
Isopropylbenzene	ND	98	107	8.8	94	100	6.2	70 - 130	30	
m&p-Xylene	ND	96	106	9.9	97	100	3.0	70 - 130	30	
Methyl ethyl ketone	ND	75	96	24.6	98	92	6.3	70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	96	111	14.5	106	104	1.9	70 - 130	30	
Methylene chloride	ND	91	103	12.4	95	96	1.0	70 - 130	30	
Naphthalene	ND	87	104	17.8	96	96	0.0	70 - 130	30	
n-Butylbenzene	ND	94	105	11.1	93	98	5.2	70 - 130	30	
n-Propylbenzene	ND	92	101	9.3	93	99	6.3	70 - 130	30	
o-Xylene	ND	95	107	11.9	97	101	4.0	70 - 130	30	
p-Isopropyltoluene	ND	96	106	9.9	94	100	6.2	70 - 130	30	
sec-Butylbenzene	ND	98	108	9.7	94	100	6.2	70 - 130	30	
Styrene	ND	96	109	12.7	99	101	2.0	70 - 130	30	
tert-Butylbenzene	ND	97	105	7.9	95	102	7.1	70 - 130	30	
Tetrachloroethene	ND	94	104	10.1	94	98	4.2	70 - 130	30	
Tetrahydrofuran (THF)	ND	87	106	19.7	95	98	3.1	70 - 130	30	
Toluene	ND	94	106	12.0	97	99	2.0	70 - 130	30	
trans-1,2-Dichloroethene	ND	98	111	12.4	98	102	4.0	70 - 130	30	
trans-1,3-Dichloropropene	ND	97	113	15.2	102	100	2.0	70 - 130	30	
trans-1,4-dichloro-2-butene	ND	98	111	12.4	90	88	2.2	70 - 130	30	
Trichloroethene	ND	95	108	12.8	98	103	5.0	70 - 130	30	
Trichlorofluoromethane	ND	99	114	14.1	116	119	2.6	70 - 130	30	
Trichlorotrifluoroethane	ND	106	114	7.3	104	109	4.7	70 - 130	30	
Vinyl chloride	ND	100	113	12.2	105	110	4.7	70 - 130	30	
% 1,2-dichlorobenzene-d4	103	101	101	0.0	101	102	1.0	70 - 130	30	
% Bromofluorobenzene	97	96	100	4.1	101	101	0.0	70 - 130	30	
% Dibromofluoromethane	101	99	102	3.0	112	105	6.5	70 - 130	30	
% Toluene-d8	100	101	100	1.0	100	101	1.0	70 - 130	30	

Comment:

A blank MS/MSD was analyzed with this batch.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

l = This parameter is outside laboratory lcs/lcsd specified recovery limits.
m = This parameter is outside laboratory ms/msd specified recovery limits.

QA/QC Data

SDG I.D.: GBH64994

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 28, 2015

Sample Criteria Exceedences Report

GBH64994 - REDTECH

Criteria: None

State: CT

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** Red Technologies, LLC

Project Location: CENTER ST., BRIDGE **Project Number:**

Laboratory Sample ID(s): BH64994, BH64995, BH64996

Sampling Date(s): 1/19/2015

RCP Methods Used:

☐ 1311/1312 ☑ 6010 ☐ 7000 ☐ 7196 ☑ 7470/7471 ☑ 8081 ☐ EPH ☐ TO15

☑ 8082 ☑ 8151 ☑ 8260 ☑ 8270 ☑ ETPH ☐ 9010/9012 ☐ VPH

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents acheived? See Sections: ETPH Narration, VOA Narration.	☐ Yes ☑ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☐ Yes ☑ No ☐ NA
7.	Are project-specific matrix spikes and laboratory duplicates included in the data set?	☑ Yes ☐ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Ethan Lee

Date: Wednesday, January 28, 2015

Printed Name: Ethan Lee

Position: Project Manager

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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

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RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

BH64994, BH64995, BH64996 - The client requested a short list of analytes from the 6010 RCP Metals list. Only the RCRA 8 Metals are reported as requested on the chain of custody.

BH64994, BH64995, BH64996 - The client requested a short list for 8270 RCP Semivolatile. Only the PAH constituents are reported as requested on the chain-of-custody.

ETPH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? No.

QC Batch 297686 (Samples: BH64994, BH64995, BH64996): -----

The LCS and/or the LCSD recovery is below the method criteria. All of the other QC is acceptable, therefore no significant bias is suspected. (Ext. Petroleum HC)

Instrument: Aufid-d1 01/22/15-1 (BH64994, BH64995, BH64996)

Initial Calibration (FID1 - ETPH_1) - The initial calibration curve was within method criteria and had a %RSD less than 30%.

As per section 7.2.3, a discrimination check standard was run and contained the following outliers: None

Printed Name Jeff Bucko
Position: Chemist
Date: 1/22/2015

QC (Batch Specific)

----------- Sample No: BH64992, QA/QC Batch: 297686 -----------

All LCS recoveries were within 60 - 120 with the following exceptions: None.

All LCSD recoveries were within 60 - 120 with the following exceptions: Ext. Petroleum HC(59%)

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

Herbicide Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd12 01/22/15-1 (BH64994, BH64995, BH64996)

Initial Calibration ECD12 -HRB107AI/BI
The initial calibration RSD for the compound list was less than 20% except for the following compounds: none

Printed Name Brian B
Position: Chemist
Date: 1/22/2015

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January 28, 2015

SDG I.D.: GBH64994

QC (Batch Specific)

----------- Sample No: BH63049, QA/QC Batch: 297240 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

Mercury Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Merlin 01/21/15-1 (BH64994, BH64995, BH64996)

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interfernce for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.

Printed Name Rick Schweitzer
Position: Chemist
Date: 1/21/2015

QC (Batch Specific)

----------- Sample No: BH61030, QA/QC Batch: 297610 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

ICP Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Arcos 01/20/15-1 (BH64994, BH64995, BH64996)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

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RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

Printed Name Laura Kinnin
Position: Chemist
Date: 1/20/2015

Instrument: Arcos 01/21/15-1 (BH64994, BH64995, BH64996)

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.

Printed Name Laura Kinnin
Position: Chemist
Date: 1/21/2015

QC (Batch Specific)

----------- Sample No: BH62498, QA/QC Batch: 297492 -----------

All LCS recoveries were within 75 - 125 with the following exceptions: None.

All LCSD recoveries were within 75 - 125 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

PAH Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Chem07 01/21/15-2 (BH64994, BH64995, BH64996)

The DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.

If PAH/base neutral were requested, Phoenix utilized a method that contained a shortened list , so some of the compounds in the narrative may be non-applicable.Initial Calibration Verification (CHEM07/BNSIM_0106):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM07/0121_17-BNSIM_0106):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the initial calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

Printed Name Damien Drobinski
Position: Chemist
Date: 1/21/2015

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NY # 11301

RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

QC (Batch Specific)

----------- Sample No: BH64983, QA/QC Batch: 297572 -----------

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd24 01/22/15-1 (BH64996)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC1231AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC1231BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/22/2015

Instrument: Au-ecd3 01/23/15-1 (BH64994, BH64995, BH64996)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC120AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC120BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/23/2015

RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

Instrument: Au-ecd5 01/22/15-1 (BH64994, BH64995)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: noneThe initial calibration (PC116AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PC116BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

Printed Name Adam Werner
Position: Chemist
Date: 1/22/2015

QC Comments: QC Batch 297484 01/19/15 (BH64994, BH64995, BH64996)

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

QC (Batch Specific)

----------- Sample No: BH64614, QA/QC Batch: 297484 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

PEST Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd13 01/22/15-1 (BH64994, BH64995, BH64996)

8081 Narration:

Endrin and DDT breakdown was evaluated and does not exceed 15%.The initial calibration (PS0115AI) RSD for the compound list was less than 20% except for the following compounds: None.

The initial calibration (PS0115BI) RSD for the compound list was less than 20% except for the following compounds: None.

The continuing calibration %D for the compound list was less than 15% except for the following compounds:
122A011 - % DCBP (27%)
122A039 - Endrin Ketone (-16%)
122A052 - % TCMX (20%), d-BHC (17%)
A low "1A" standard was run to demonstrate capability to detect these compounds at the indicated RL. All reported samples were ND for these compounds.

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RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

Printed Name	Carol Eddy
Position:	Chemist
Date:	1/22/2015

QC Comments: QC Batch 297483 01/19/15 (BH64994, BH64995, BH64996)

A LCS and LCS duplicate were performed instead of a MS and MSD. Alpha and gamma chlordane were spiked and analyzed instead of technical chlordane. Gamma chlordane recovery is reported as chlordane in the LCS and LCSD

QC (Batch Specific)

----------- Sample No: BH64614, QA/QC Batch: 297483 -----------

All LCS recoveries were within 40 - 140 with the following exceptions: None.

All LCSD recoveries were within 40 - 140 with the following exceptions: None.

All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

VOA Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? No.

QC Batch 297657 (Samples: BH64994, BH64995, BH64996): -----

The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. (Bromomethane, Dichlorodifluoromethane)

QC Batch 297755 (Samples: BH64994, BH64995, BH64996): -----

The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. (Bromomethane)

The QC recovery for one or more analytes is above the upper range but were not reported in the sample(s), therefore no significant bias is suspected. (Dichlorodifluoromethane)

Instrument: Chem02 01/20/15-1 (BH64994, BH64995, BH64996)

Initial Calibration Verification (CHEM02/RPP_0120):
95% of target compounds met criteria.
The following compounds had %RSDs >20%: 2-Hexanone (31%), Acetone (31%), Methyl Ethyl Ketone (22%), Methylene Chloride (21%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM02/0120P15-RPP_0120):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: Bromoform (.070)[SPCC: 0.1]

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NY # 11301

RCP Certification Report

January 28, 2015

SDG I.D.: GBH64994

Printed Name Michael Hahn
Position: Chemist
Date: 1/20/2015

Instrument: Chem02 01/21/15-1 (BH64994, BH64995, BH64996)

Initial Calibration Verification (CHEM02/RPP_0120):
95% of target compounds met criteria.
The following compounds had %RSDs >20%: 2-Hexanone (31%), Acetone (31%), Methyl Ethyl Ketone (22%), Methylene Chloride (21%)
The following compounds did not meet a minimum response factor of 0.01: None.

Continuing Calibration Verification (CHEM02/0121P02-RPP_0120):
100% of target compounds met criteria. Internal standards were within the 50%-200% deviation from the continuing calibration. The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: Bromoform (.077)[SPCC: 0.1]

Printed Name Michael Hahn
Position: Chemist
Date: 1/21/2015

QC Comments: QC Batch 297657 01/20/15 (BH64994, BH64995, BH64996)

A blank MS/MSD was analyzed with this batch.

QC Comments: QC Batch 297755 01/21/15 (BH64994, BH64995, BH64996)

A blank MS/MSD was analyzed with this batch.

QC (Batch Specific)

----------- Sample No: BH64996, QA/QC Batch: 297755 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: Bromomethane(133%)

All LCSD recoveries were within 70 - 130 with the following exceptions: Bromomethane(138%), Dichlorodifluoromethane(135%)

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

----------- Sample No: BH65081, QA/QC Batch: 297657 -----------

All LCS recoveries were within 70 - 130 with the following exceptions: None.

All LCSD recoveries were within 70 - 130 with the following exceptions: Bromomethane(141%), Dichlorodifluoromethane(137%)

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

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January 28, 2015

SDG I.D.: GBH64994

Temperature Narration

The samples in this delivery group were received at 6°C.
(Note acceptance criteria is above freezing up to 6°C)

PHOENIX *Environmental Laboratories, Inc.*

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 0.0°C Pg 1 of 1

Data Delivery: WIC IP
☐ Fax #:
☒ Email: tmahler@redtechllc.com

Customer: RED Technologies, LLC
Address: 10 Northwood Dr.
Bloomfield, CT 06002

Project: Center St. Bridge
Report to: Todd Mahler
Invoice to: Todd Mahler

Project P.O: 14-385
Phone #: 860-218-2428
Fax #:

Client Sample - Information - Identification

Sampler's Signature Date 1-19-15

Matrix Code:
DW=drinking water **WW**=wastewater **S**=soil/solid **O**=other
GW=groundwater **SL**=sludge **A**=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	CT ETPH	VOCs via 8260	PAH's via 8270	PCB's via 8082	Total RCRA 8 Metals	Pesticides	Herbicides	Soil VOA [ ] Methanol [ ] S. Bisulfate [ ] H20	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
64994	MW-1	GW	1-19-15	0930	X	X	X	X	X	X	X				3	5			1		
64995	MW-2	↓	↓	1010	↓	↓	↓	↓	↓	↓	↓				↓	↓			↓		
64996	MW-3	↓	↓	1030	↓	↓	↓	↓	↓	↓	↓				↓	↓			↓		

Relinquished by:	Accepted by:	Date:	Time:
	RED Fridge	1-19-15	1530
Reel Frasier		1-20-15	1025
		1-20-15	14:57

Comments, Special Requirements or Regulations:

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

*** SURCHARGE APPLIES**

CT/RI
☒ RCP Cert.
☐ GW Protect.
☐ GA Mobility
☐ GB Mobility
☐ SW Protect.
☐ Res. Vol.
☐ Ind. Vol.
☐ Res. Criteria
☐ Other

MA
☐ MCP Cert.
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ ASP-A
☐ NJ Reduced Deliv. *
☐ NJ Hazsite EDD
☐ Phoenix Std Report
☐ Other

State where samples were collected: CT

TASK 310:
PLANS, SPECIFICATIONS AND ESTIMATES

REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK

MERIDEN, CONNECTICUT

CONNDOT PROJECT NO. 79-212
CONNDOT BRIDGE NO. 04185

Prepared For:

State of Connecticut
Department of Transportation
Newington, Connecticut 06131

Prepared by:

RED TECHNOLOGIES, LLC
10 Northwood Drive
Bloomfield, Connecticut 06002
Project No. 14-385

FEBRUARY 2015

QUALITY ASSURANCE/QUALITY CONTROL

TASK 310:
PLANS, SPECIFICATIONS AND ESTIMATES

Replacement of Center Street Bridge over Harbor Brook
Conn DOT Project No. 79-212
Center Street Bridge No. 04185
Meriden, Connecticut

The following personnel have reviewed this report for accuracy, content and quality of presentation:

2-20-2015
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Todd Mahler Date
Project Manager

2-20-2015
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Louis H. Muratore Date
Division Manager/Senior Project Manager

PROJECT ENVIRONMENTAL SUMMARY

The proposed project will include replacement of the existing bridge (ConnDOT Bridge No. 04185) with a fifty (50) foot clear span precast concrete box beam structure. This bridge replacement is part of an overall city wide Harbor Brook Flood Control Project, and as a result, there will be hydraulic improvements to reduce future flooding. These improvements include widening of the bridge, channel re-alignment and grading, utility and drainage updates and relocations, and roadway repaving within the disturbed area (approximately four hundred (400) feet).

A Task 210 – Subsurface Site Investigation was conducted within the project limits to verify the absence or presence and location of subsurface contamination, and to assess the potential pollutant soil, sediment and groundwater impacts to be encountered during excavation activities associated with the construction of the new bridge, roadway and storm water conveyance modifications.

The results of the Task 210 identified the presence of Polynuclear Aromatic Hydrocarbons (PAHs) and Extractable Total Petroleum Hydrocarbons (ETPH) at concentrations greater than applicable Connecticut Department of Energy & Environmental Protection (CTDEEP) Remediation Standard Regulation (RSR) criteria in soils at depths ranging from 0-10 ft bgs. Sediment grab samples identified the presence of low-level concentrations of PAHs and ETPH and surface water samples identified the presence of low-level Volatile Organic Compounds (VOCs) and total Resource Conservation and Recovery Act (RCRA) 8 metals. In addition, groundwater has identified the presence VOCs and total RCRA 8 metals at concentrations greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* effluent discharge limitations.

The project site is located in a "GB" groundwater area. The GB classification is designated for groundwater that has been degraded due to regional usage and is not suitable for potable use without treatment. Groundwater was encountered between 7.78 and 9.24 ft below ground surface.

Harbor Brook is listed as a Class "B" inland surface water Body. The Class "B" surface water classification is assigned to: fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

REMEDIATION METHODOLOGY

Based on the proposed construction and the results of the environmental investigations conducted within the project limits, two (2) areas of environmental concern (AOECs) for soil has been identified where contaminants are present at concentrations that exceed the applicable CTDEEP RSR criteria. Groundwater concentrations have identified the presence of VOCs and/or RCRA 8 metals in all groundwater monitoring wells greater than the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* numeric criteria; therefore, the entire project Site has been designated a groundwater area of environmental concern (GW-AOEC). Two (2) low-level areas of environmental concern (LL-AOECs) for soil and one (1) LL-AOEC for sediment have been identified where contaminants were detected at concentrations below applicable CTDEEP RSR standards, but above laboratory detection limits.

The proposed remediation methodology for the AOECs/LL-AOECs is controlled handling, management and disposal and/or re-use of material excavated. Excavated material from the AOECs shall be transported to and stockpiled at a Waste Stockpile Area (WSA) for characterization prior to disposal and/or re-use.

Materials generated from LLAOECs do not require special handling procedures and may be re-used within the project limits assuming: (1) such soil is deemed to be structurally suitable for use as fill by the Engineer; (2) such soil is not placed below the water table; 3) the CTDEEP groundwater classification of the area where the soil is to be reused as fill does not preclude said reuse; and (4) such soil is not placed in an area subject to erosion.

Material from the LL-AOECs, which cannot be re-used within the project limits, shall be transported to the WSA for characterization and off-site disposal.

All controlled materials shall be sampled and characterized for disposal and/or re-use in accordance with the contract specifications and RSRs. Construction dewatering fluids will also require controlled handling and management compliant to the CTDEEP General Permit requirements. Surface waters are not considered a controlled material and pumping and diverting of surface waters shall be handled in accordance with the approved permits for the project.

Based on the proposed construction activities, it is anticipated that an area of approximately 6,000 square feet (ft^2) will be required for the construction of a WSA. The WSA will be located on a parcel located on Center Street adjacent to the project limits (see Figure 1).

ENVIRONMENTAL DRAWINGS AND SPECIFICATION SECTIONS

The following are anticipated environmental specification sections, drawings, quantities and cost estimates:

Drawings:

- Figure 1 - Contaminated Soil and Groundwater Plan

Specifications:

- Notice to Contractor - Environmental Investigations
- Item No. 0020763A - Disposal of Sediments
- Item No. 0101000A - Environmental Health and Safety
- Item No. 0101117A - Controlled Material Handling
- Item No. 0101128A - Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area
- Item No. 0101130A - Environmental Work – Solidification
- Item No. 0202315A - Disposal of Controlled Material
- Item No. 0202318A - Management of Reusable Controlled Material
- Item No. 0204210A - Handling Contaminated Groundwater

ENVIRONMENTAL SPECIFICATION QUANTITIES & COSTS ESTIMATES

TABLE 1

Item No.	Item	Unit	Qty	Unit Price	Total Cost
0020763A	Disposal of Sediments	Ton	1,350	$74.50	$100,575.00
0101000A	Environmental Health and Safety	L.S.	1	$5,000.00	$5,000.00
0101117A	Controlled Material Handling	C.Y.	6,300	$7.00	$44,100.00
0101128A	Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area	L.S.	1	$40,000.00	$40,000.00
0101130A	Environmental Work – Solidification	Ton	780	$96.00	$74,880.00
0202315A	Disposal of Controlled Material	Ton	8,280	$50.00	$414,000.00
0202318A	Management of Reusable Controlled Material	C.Y.	400	$8.00	$3,200.00
0204210A	Handling Contaminated Groundwater	L.S.	1	$168,000.00	$168,000.00

HEALTH AND SAFETY REQUIREMENTS

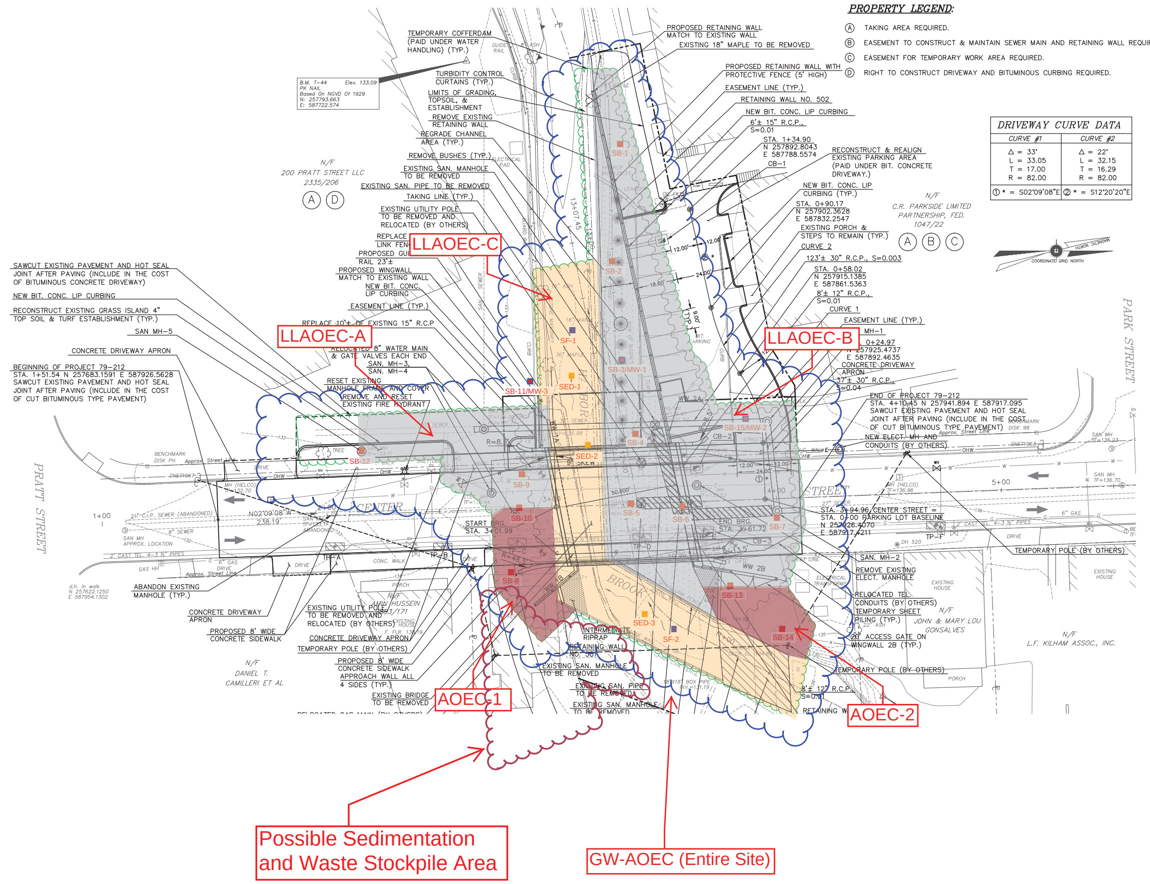
Based on the results of the environmental investigations, proposed construction activities pose a low to moderate risk of harm to site construction workers, inspectors and downwind receptors from exposure to environmental contaminates through inhalation of vapors or dust, dermal contact or ingestion. A site specific health and safety plan (HASP) shall be implemented to address the relative risks of exposure to documented hazards present within the AOECs. The HASP shall establish health and safety protocols to address the environmental concerns directly related to site conditions and in accordance with applicable Federal and State regulations and the contract specifications.

TASK 620 SERVICES AND COST ESTIMATES

TABLE 2

Task No.	Item	Unit	Qty	Unit Price	Total Cost
620	Construction Compliance Surveillance	Hour	960	$75.00*	$72,000.00*

*pricing not applicable for a Department of Administrative Services (DAS) on-call contractor



PROPERTY LEGEND:

- Ⓐ TAKING AREA REQUIRED.
- Ⓑ EASEMENT TO CONSTRUCT & MAINTAIN SEWER MAIN AND RETAINING WALL REQUIRED.
- Ⓒ EASEMENT FOR TEMPORARY WORK AREA REQUIRED.
- Ⓓ RIGHT TO CONSTRUCT DRIVEWAY AND BITUMINOUS CURBING REQUIRED.

DRIVEWAY CURVE DATA

CURVE #1	CURVE #2
Δ = 33°	Δ = 22°
L = 33.05	L = 32.15
T = 17.00	T = 16.29
R = 82.00	R = 82.00
① * = S02°09'08"E	② * = S12°20'20"E

CENTER STREET BRIDGE REPLACEMENT
BRIDGE # 04185
ROADWAY PLAN

SCALE IN FEET

SCALE: 1" = 20'

Legend

- Soil Boring/ Temporary Groundwater Monitoring Well
- Soil Boring
- Sediment sample
- Surface Water Sample
- Limit of Excavation

RED TECHNOLOGIES, LLC

10 Northwood Drive, Bloomfield, CT 06002
(860) 218-2428 | www.redtechllc.com

DATE: 1-30-2015

SCALE: AS SHOWN

DRAWN BY: TWM

CHECKED BY: LM

TITLE: Contaminated Soil and Groundwater Plan

FIGURE NO: 1

ADDRESS: Center Street Bridge Over Harbor Brook Meriden, Connecticut

NO.	DATE	DESCRIPTION	SHEET NO.

REVISIONS

SUPERVISOR: J.A.C.
DESIGNER: T.I., E.I.N.
DRAFTER: E.I.N., C.A.
CHECKED BY: T.I., J.A.C.
DATE CHECKED: 09/19/14

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: WENGELL, McDONNELL & COSTELLO CONSULTING ENGINEERS

APPROVED BY: DATE:

OFFICE OF ENGINEERING

PROJECT TITLE: REPLACEMENT OF CENTER STREET BRIDGE OVER HARBOR BROOK

CADD FILE: \PROJECTS\00056\CENTER\DRAWINGS\PLAN&PROFILE\CENTER PLAN

TOWN: CITY OF MERIDEN, CT

DRAWING TITLE: CENTER STREET ROADWAY PLAN

PROJECT NO.: 79-212
BRIDGE NO.: 04185
DRAWING NO.: - OF -
SHEET NO.: 3 OF 25

NOTICE TO CONTRACTOR

ENVIRONMENTAL INVESTIGATIONS

A Task 210 environmental site investigation was conducted and included laboratory analysis of soil, sediment, surface water and groundwater samples collected from various locations and depths within the project limits. The groundwater beneath the Site is classified by the Connecticut Department of Energy and Environmental Protection (CTDEEP) as GB.

Soil analytical results identified the presence of poly aromatic hydrocarbons (PAHs) and extractable total petroleum hydrocarbons (ETPH) at concentrations that exceed the Connecticut's Remediation Standard Regulations (RSRs) applicable to the Pollutant Mobility Criteria (GB) and/or the Residential Direct Exposure Criteria. The contamination was detected in soils ranging from 0 to 10 feet below ground surface.

Three groundwater grab samples were collected within the Project limits. Groundwater analytical results identified the presence of volatile organic compounds (VOCs) and total resource and conservation act (RCRA) 8 metals concentrations that exceed CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater directly to Surface Water* effluent discharge limitations. Therefore, groundwater from dewatering activities will require special handling as outlined in Item No. 0204213A, "Handling Contaminated Groundwater." Groundwater was encountered in soil borings at depths ranging between 7.78 and 9.24 feet below ground surface.

Based on the analytical data collected during the Task 210 environmental site investigation, two areas of environmental concern (AOECs) for soil have been identified where contaminants are present at concentrations greater than applicable CT DEEP RSR criteria. The entire site has also been designated a groundwater area of environmental concern (GW-AOEC). In addition, two low-level areas of environmental concern (LLAOECs) for soil and one LLAOEC for sediment have been identified

All excavated materials will be loaded into leak-free roll-off/storage containers to contain any free-draining liquid remaining in the excavated materials. Controlled Materials excavated from within the identified AOECs shall be managed as specified in Item No. 0101117A, "Controlled Material Handling". Soils excavated from within the AOEC's shall be transported directly to the Waste Stockpile Area (WSA) for disposal characterization and such soil will not be reusable as backfill and will require special handling, disposal and documentation procedures. Controlled Materials will be loaded and transported for off-site disposal, as specified in Item No. 0202315A, "Disposal of Controlled Materials". All controlled sediments, and soils excavated from below the groundwater table (intended for reuse) are required to be solidified, as specified in Item No. 0101130A, "Environmental Work – Solidification," prior transport and off-site disposal, as specified in Item No. 0020763A, "Disposal of Sediments" or reuse, as specified in Item No. 0202318A – "Management of Reusable Controlled Material".

Based on the proposed construction activities, it is anticipated that an area of approximately 6,000 square feet (ft^2) will be required for construction of a WSA. The proposed WSA location will be constructed on a parcel adjacent to the Center Street Bridge, depicted on the project drawings, and as specified in Item No. 0101128A, "Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area."

LL-AOEC's exist within the proposed project limits, where the compounds were detected at concentrations below the CT RSR numeric criteria. The presence of the compounds at these concentrations will not require material-handling measures beyond those required for normal construction operations. The presence of these compounds at these concentrations will require the disposition of soils excavated from these areas to be restricted as described herein. Material excavated from within the LL-AOEC's that cannot be reused within the Project limits will require disposal at an approved treatment/disposal facility in accordance with Item No. 0202315A - Disposal of Controlled Materials. Transport of the low-level material from the site to the WSA will not be paid for separately and shall be part of the applicable excavation items within the contract.

All suitable material excavated within the LL-AOEC's shall be utilized as backfill in accordance with the following conditions: (1) such soil is deemed to be structurally suitable for use as fill by the Engineer; (2) such soil is not placed below the water table; 3) the DEP groundwater classification of the area where the soil is to be reused as fill does not preclude said reuse; and (4) such soil is not placed in an area subject to erosion. Soils within the LL-AOEC's are to be reused prior to the use of other soils and/or fill such that no excess soils requiring off-site disposal are generated from the LL-AOEC's.

Surface waters are not considered a controlled material and pumping and diverting of surface waters shall be handled in accordance with the approved permits for the project.

The Contractor is hereby notified that controlled materials requiring special management and/or disposal procedures will be encountered during various construction activities conducted within the project limits. Therefore, the Contractor will be required to implement appropriate health and safety measures for all construction activities to be performed within the AOEC(s). These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination and personnel training. WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIALAND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The City of Meriden and/or the ConnDOT, as Generator, will provide an authorized representative to sign all manifests and waste profile documentation required by disposal facilities for disposal of contaminated soil, water, and controlled and hazardous materials.

The Sections which shall be reviewed by the Contractor include, but are not limited to, the following:

- Item No. 0101000A - Environmental Health and Safety
- Item No. 0101117A - Controlled Material Handling
- Item No. 0101128A - Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area

- Item No. 0101130A - Environmental Work – Solidification
- Item No. 0202315A - Disposal of Controlled Material
- Item No. 0202318A - Management of Reusable Controlled Material
- Item No. 0204210A - Handling Contaminated Groundwater
- Item No. 0020763A - Disposal of Sediments

The Contractor is alerted to the fact that a Department environmental consultant will be on site for excavation and dewatering activities within the AOEC's and LL-AOEC's, to collect soil and groundwater samples (if necessary), and to observe site conditions for the State. The WSA is to be used exclusively for temporary stockpiling of excavated materials from within project AOEC's for determination of disposal classification and excavated materials from the LLAOEC's for re-use.

Information pertaining to the results of the environmental investigations discussed can be found in the document listed below. This document shall be available for review at the Meriden City Hall located at 142 East Main Street, Meriden, Connecticut and/or the Office of Contracts located at 2800 Belin Turnpike, Newington, Connecticut.

Task 210 -Subsurface Site Investigation -Replacement of Center Street Bridge Over Harbor Brook. Meriden, Connecticut. RED TECHNOLOGIES, February 2015.

ITEM NO. 0020763A - DISPOSAL OF SEDIMENTS

Description:

Work under this item shall consist of the loading, transportation and final off-site disposal of sediments. These sediments are contaminated at non-hazardous levels as documented in the reports listed in the "Notice to Contractor – Environmental Investigations". The controlled sediments are designated for off-site disposal at an upland facility and, after characterization by the Engineer, shall be taken from the WSA, loaded, transported, and disposed of at a DOT-approved upland disposal facility listed herein.

Controlled Sediments include soils or other natural or artificial materials originating from river, lake, ocean bottoms, or all or part of the banks, bed or bottom of an intermittent or perennial surface water that (1) contain regulated substances at concentrations exceeding numeric criteria in Connecticut's Remediation Standard Regulations (CT RSRs); or (2) contain detectable concentrations of regulated substances that are below numeric criteria in CT RSRs but above background concentrations that cannot be reused within the Project Limits.

The Contractor must use one or more of the following Department-approved facilities for the disposal of non-hazardous sediments:

ESMI of New Hampshire Attn: Mike Phelps 67 International Drive Loudon, NH 03307 Phone: (603) 783-0228 Fax: (603) 783-0104	ESMI of New York Attn: Peter Hansen 304 Towpath Road Fort Edward, New York 12828 Phone: (518) 747-5500 Fax: (518) 747-1181
Cranston Sanitary Landfill Attn: Paul Mahoney 1690 Pontiac Avenue Cranston, RI 02920 Phone: (413) 552-3688 and 978-463-6813 Cell: 508-265-3386	Clean Earth of North Jersey, Inc. Attn: Robert Fixter 115 Jacobus Avenue, South Kearny, NJ 07105 Phone: 973-344-4004 Fax: 973-344-8652 Ext. 272
Hazelton Creek Properties* Attn: Allen Swantek 280 South Church Street Hazelton, PA 18201 Phone: (570) 207-2000 Fax: (570) 457-3395	Waste Management of New Hampshire Attn: Linda Davide 90 Rochester Neck Road P.O. Box 7065 Rochester, NH 03839 Phone: 603-330-2170 and 716-286-0365 Fax: 603-330-2130

Waste Management – Chicopee Landfill Attn: Thomas Murray 161 New Lombard Road Chicopee, MA 01020 Phone: (413) 534-8741 Fax: (413) 493-1547	Southbridge Recycling and Disposal Park Attn: Scott Sampson 165 Barefoot Road Southbridge, MA 01550 Phone: (603) 235-3597 Fax: (508) 765-6812

*-Please note that if this facility is to be used, each bin letter will require an additional 10 day (or more) waiting period in addition to the 15 day lab period (specified in Section B) to allow for Pennsylvania Department of Environmental Protection (PADEP) review.

Construction Methods:

A. Submittals

The apparent low bidder shall submit in writing, within fourteen days after Bid opening, (1) a letter listing the names of the treatment/recycle/disposal facilities (from the list above) which the bidder, if it is awarded the Contract, will use to receive controlled sediments from this Project, (2) a copy of the attached “Disposal Facility Material Acceptance Certification” form from each facility, which shall be signed by an authorized representative of each treatment/recycle/disposal facility, and (3) a copy of the facility acceptance criteria and facility sampling frequency requirements from each facility.

Any other Contractor which the Department may subsequently designate as the apparent low bidder shall make the aforementioned submissions within fourteen (14) days from the date on which the Department notifies the Contractor that it has become the apparent low bidder. If, however, the Department deems it is necessary for such a subsequent-designated Contractor to make said submissions within a shorter period of time, the Contractor shall make those submissions within the time designated by the Department.

Failure to comply with all of the above requirements may result in the rejection of the bid.

No facility may be substituted for the one(s) designated in the Contractor′s submittal without the Engineer’s prior approval. If the material cannot be accepted by any of the Contractor’s designated facilities, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Disposal Facility Materials Acceptance Certification

Project Number ___________________________________

Project Location___________________________________

Facility Name_____________________________________ Telephone____________________

Facility Address___________________________________ Fax_______________________

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The Contractor has supplied the analytical data contained in the report concerning the site investigation performed by the Designer. I have personally reviewed this data and intend to accept the following:

Controlled materials as described in Item # 020763A "Disposal of Sediments" for the subject Project at a cost of $___________________ per ton for treatment/disposal and an additional $___________ per ton for transportation from the Project to the disposal facility (if applicable).

This intent to accept the material will be subject to and dependent upon the facility's subsequent evaluation of waste characterization determination documentation to be provided to the Contractor by the Engineer.

Authorized Facility
Representative__________________________________/____________________
Printed/Typed Name Title

__________________________________/____________________
Signature Date

Note: The facility shall attach the acceptance criteria and facility sampling frequency requirements to this document.

DO NOT ALTER FORM IN ANY WAY. FORM MUST BE COMPLETED IN ENTIRETY.

B. Sediment Disposal

Controlled Sediments shall be kept separate from other types of waste stored at the WSAs. If necessary and as directed by the Engineer, sediments shall be solidified in accordance with Item No. 0101130A – “Environmental Work –Solidification”.

After the sediment has adequately dewatered and any necessary solidification material has been added, the Engineer will sample materials stored at the WSA at a frequency established by the selected treatment/recycling/disposal facilities. The Contractor shall designate to the Engineer which facility he intends to use prior to samples being taken. The Contractor is hereby notified that laboratory turnaround time is expected to be fifteen (15) working days. Turnaround time is the period of time beginning when the Contractor notifies the Engineer that the bin within the WSA is full and ready for sampling and ending with the Contractor’s receipt of the laboratory analytical results. Any change of intended treatment/recycling/disposal facility may prompt the need to resample and will therefore restart the time required for laboratory turnaround. The laboratory will furnish such results to the Engineer. Upon receipt, the Engineer will make available to the Contractor the results of the final waste characterization determinations. **No delay claim will be considered based upon the Contractor's failure to accommodate the laboratory turnaround time as identified above.**

The Contractor shall obtain and complete all paperwork necessary to arrange for material disposal, including disposal facility waste profile sheets. It is solely the Contractor’s responsibility to co-ordinate the disposal of controlled materials with its selected treatment/recycling/disposal facility(s). Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and treatment/recycling/disposal of the materials in accordance with all Federal and State regulations. **No claim will be considered based on the failure of the Contractor’s disposal facility(s) to meet the Contractor’s production rate or for the Contractor’s failure to select sufficient facilities to meet its production rate.**

All manifests or bills of lading utilized to accompany the transportation of the material shall be prepared by the Contractor a minimum of 24 hours in advance and signed by an authorized Department representative, as Generator, for each truck load of material that leaves the site. The Contractor shall forward the appropriate original copies of all manifests or bills of lading to the Engineer the same day the material leaves the Project.

A load-specific certificate of disposal, signed by the authorized agent representing the disposal facility, shall be obtained by the Contractor and promptly delivered to the Engineer for each load.

C. Sediment Transportation

In addition to all pertinent Federal, State and local laws or regulatory agency polices, the Contractor shall adhere to the following precautions during the transport of sediments off-site:

- Transported controlled materials are to be covered sufficiently to preclude the loss of material during transport prior to leaving the site and are to remain covered until the arrival at the selected treatment/recycling/disposal facility;
- All vehicles departing the site are to be properly logged to show the vehicle identification, driver's name, time of departure, destination, and approximate volume, and contents of materials carried;
- No materials shall leave the site unless a treatment/recycling/disposal facility willing to accept all of the material being transported has agreed to accept the type and quantity of waste; and
- Discharge openings on trucks used for the transportation of sediments must be securely closed during transportation. Trucks deemed unacceptable for use by the Engineer will not be used for the transportation of sediments.

D. Equipment Decontamination

All equipment shall be provided to the work site free of gross contamination. The Engineer may prohibit from the site any equipment that in his opinion has not been thoroughly decontaminated prior to arrival. Any decontamination of the Contractor's equipment prior to arrival at the site shall be at the expense of the Contractor. The Contractor is prohibited from decontaminating equipment on the Project site that has not been thoroughly decontaminated prior to arrival.

The Contractor shall furnish labor, materials, tools and equipment for decontamination of all equipment and supplies that are used to handle the controlled sediments. Decontamination shall be conducted at an area designated by the Engineer and shall be required prior to equipment and supplies leaving the Project, between stages of the work, and between work in different AOEC's.

The Contractor shall use dry decontamination procedures. Residuals from dry decontamination activities shall be collected and managed as controlled sediments. If the results from dry methods are unsatisfactory to the Engineer, the Contractor shall modify decontamination procedures as required.

The Contractor shall be responsible for the collection and treatment/recycling/disposal of any liquid wastes that may be generated by its decontamination activities in accordance with applicable regulations.

Method of Measurement:

The work of "DISPOSAL OF SEDIMENTS" will be measured for payment as the actual net weight in tons of material delivered to the treatment/recycling/disposal facility. Such determinations shall be made by measuring each hauling vehicle on the certified permanent scales at the treatment/recycling/disposal facility. Total weight will be the summation of weight bills issued by the facility specific to this Project. Excess excavations made by the Contractor beyond the payment limits specified in Specifications Sections 2.02, 2.03, 2.05, 2.06, or the

Contract Special Provisions (as appropriate) will not be measured for payment and the Contractor assumes responsibility for all costs associated with the appropriate handling, management and disposal of this material.

Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.

Basis of Payment:

This work will be paid for at the Contract unit price, which shall include the loading and transportation of sediments from the WSA to the treatment/recycling/disposal facility; the treatment/recycling/disposal; the preparation of manifests and fees paid; and all equipment, materials, tools, and labor incidental to loading, transporting, and treating/recycling/disposal of materials. **This unit price will be applicable to all of the Contractor-selected disposal facilities for the duration of the Project.**

This price shall also include equipment decontamination; the collection of residuals generated during decontamination and placement of such material in the WSA; and the collection and disposal of liquids generated during equipment decontamination activities.

Solidification of sediments will be paid under other Contract items.

Pay Item	Pay Unit
Disposal of Sediments	Ton

ITEM #0101000A – ENVIRONMENTAL HEALTH AND SAFETY

Description:
Under this item, the Contractor shall establish protocols and provide procedures to protect the health and safety of its employees and subcontractors as related to the proposed construction activities performed within the Project AOEC's and LL-AOEC's. Work under this Item consists of the development and implementation of a written HASP that addresses the relative risk of exposure to documented hazards present within Project limits. The HASP shall establish health and safety protocols that address the relative risk of exposure to regulated substances in accordance with 29 CFR 1910.120 and 29 CFR 1926.65. Such protocols shall only address those concerns directly related to site conditions.

Note: The Engineer will prepare a site-specific health and safety plan which is compatible with the Contractor's plan and will be responsible for the health and safety of all Project Inspectors, Department employees and consulting engineers.

Materials:

The Contractor must provide chemical protective clothing (CPC) and personal protective equipment (PPE) as stipulated in the Contractor's HASP during the performance of work in areas identified as potentially posing a risk to worker health and safety for workers employed by the Contractor and all subcontractors.

Construction Methods:

1-Existing Information: The Contractor shall utilize all available information and existing records and data pertaining to chemical and physical hazards associated with any of the regulated substances identified in the environmental site investigations to develop the HASP. A list of documents containing this data is found in "Notice to Contractor – Environmental Investigations".

2-General: The requirements set forth herein pertain to the provision of workers' health and safety as it relates to proposed Project activities when performed in the presence of hazardous or regulated materials or otherwise environmentally sensitive conditions. THE PROVISION OF WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS POSED TO CONTRACTOR EMPLOYEES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The Contractor shall be responsible for the development, implementation and oversight of the HASP throughout the performance of work within the limits of the AOEC's and LL-AOEC's, as identified in the Contract Documents, and in other areas identified by the Engineer or by the HASP where site conditions may pose a risk to worker health and safety and/or the environment. **No physical aspects of the work within the AOEC or LL-AOEC's shall begin until the**

HASP is reviewed by the Engineer and is determined to meet the requirements of the specifications. However, the Contract time, in accordance with Article 1.03.08, will begin on the date stipulated in the Notice to Proceed.

3-Regulatory Requirements: All construction related activities performed by the Contractor within the limits of the AOEC's, LL-AOEC's, or in other areas where site conditions may pose a risk to worker health and safety and/or the environment shall be performed in conformance with 29 CFR 1926, Safety and Health Regulations for Construction and 29 CFR 1910, Safety and Health Regulations for General Industry. Conformance to 29 CFR 1910.120, Hazardous Waste Site Operations and Emergency Response (HAZWOPER) may also be required, where appropriate.

4-Submittals: Three copies of the HASP shall be submitted to the Engineer within four (4) weeks after the Award of Contract or four (4) weeks prior to the start of any work in the AOEC's or LL-AOEC's, whichever is first, but not before the Award of the Contract.

The HASP shall be developed by a qualified person designated by the Contractor. This qualified person shall be a Certified Industrial Hygienist (CIH), Certified Hazardous Material Manager (CHMM), or a Certified Safety Professional (CSP). He/she shall have review and approval authority over the HASP and be identified as the Health and Safety Manager (HSM). The HASP shall bear the signature of said HSM indicating that the HASP meets the minimum requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

The Engineer will review the HASP(s) within four (4) weeks of submittal and provide written comments as to deficiencies in and/or exceptions to the plan(s), if any, to assure consistency with the specifications, applicable standards, policies and practices and appropriateness given potential or known site conditions. Items identified in the HASP which do not conform to the specifications will be brought to the attention of the Contractor, and the Contractor shall revise the HASP to correct the deficiencies and resubmit it to the Engineer for determination of compliance with this item. The Contractor shall not be allowed to commence work activities in the AOEC's or LL-AOEC's, as shown on the Plans, or where site conditions exist which may pose a risk to worker health and safety and/or the environment, until the HASP has been reviewed and accepted by the Engineer. **No claim for delay in the progress of work will be considered for the Contractor's failure to submit a HASP that conforms to the requirements of the Contract.**

5-HASP Provisions:

(a) General Requirements: The Contractor shall prepare a HASP covering all Project site work regulated by 29 CFR 1910.120(b)/ 1926.65(b) to be performed by the Contractor and all subcontractors under this Contract. The HASP shall establish in detail, the protocols necessary for the recognition, evaluation, and control of all hazards associated with each task performed under this Contract. The HASP shall address site-specific safety and health hazards of each phase of site operation and include the requirements and procedures for employee protection. The level of detail provided in the HASP shall be tailored to the type of work, complexity of operations to be performed, and hazards anticipated. Details about some activities may not be available when the initial HASP is prepared and submitted. Therefore, the HASP shall address, in as much detail as possible, all anticipated tasks, their related hazards and anticipated control measures.

The HASP shall interface with the Contractor's Safety and Health Program. Any portions of the Safety and Health Program that are referenced in the HASP shall be included as appendices to the HASP. All topics regulated by the 29 CFR 1910.120(b)(4) and those listed below shall be addressed in the HASP. Where the use of a specific topic is not applicable to the Project, the HASP shall include a statement to justify its omission or reduced level of detail and establish that adequate consideration was given to the topic.

(b) Elements:

(i) Site Description and Contamination Characterization: The Contractor shall provide a site description and contaminant characterization in the HASP that meets the requirements of 29 CFR 1910.120/1926.65.

(ii) Safety and Health Risk Analysis/Activity Hazard Analysis: The HASP shall address the safety and health hazards on this site for every operation to be performed. The Contractor shall review existing records and data to identify potential chemical and physical hazards associated with the site and shall evaluate their impact on field operations. Sources, concentrations (if known), potential exposure pathways, and other factors as noted in CFR 1910.120/126.65, paragraph (c)(7) employed to assess risk shall be described. The Contractor shall develop and justify action levels for implementation of engineering controls and personal protective equipment upgrades and downgrades for controlling worker exposure to the identified hazards. If there is no permissible exposure limit (PEL) or published exposure level for an identified hazard, available information from other published studies may be used as guidance. Any modification of an established PEL must be fully documented.

The HASP shall include a comprehensive section that discusses the tasks and objectives of the site operations and logistics and resources required to complete each task. The hazards associated with each task shall be identified. Hazard prevention techniques, procedures and/or equipment shall be identified to mitigate each of the hazards identified.

(iii) Staff Organization, Qualifications and Responsibilities: The HASP shall include a list of personnel expected to be engaged in site activities and certify that said personnel have completed the educational requirements stipulated in 29 CFR 1910.120 and 29 CFR 1926.65, are currently monitored under a medical surveillance program in compliance with those regulations, and that they are fit for work under "level C" conditions.

The Contractor shall assign responsibilities for safety activities and procedures. An outline or flow chart of the safety chain of command shall be provided in the HASP. Qualifications, including education, experience, certifications, and training in safety and health for all personnel engaged in safety and health functions shall be documented in the HASP. Specific duties of each on-site team member should be identified. Typical team members include but are not limited to

Team Leader, Scientific Advisor, Site Safety Officer, Public Information Officer, Security Officer, Record Keeper, Financial Officer, Field Team Leader, and Field Team members.

The HASP shall also include the name and qualifications of the individual proposed to serve as Health and Safety Officer (HSO). The HSO shall have full authority to carry out and ensure compliance with the HASP. The Contractor shall provide a competent HSO on-site who is capable of identifying existing and potential hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate or control them. The qualifications of the HSO shall include completion of OSHA 40-hour HAZWOPER training, including current 8-hour refresher training, and 8-hour HAZWOPER supervisory training; a minimum of one year of working experience with the regulated compounds that have been documented to exist within Project limits; a working knowledge of Federal and State safety regulations; specialized training or documented experience (one year minimum) in personal and respiratory protective equipment program implementation; the proper use of air monitoring instruments, air sampling methods and procedures; and certification training in first aid and CPR by a recognized, approved organization such as the American Red Cross.

The primary duties of the HSO shall be those associated with worker health and safety. The Contractor's HSO responsibilities shall be detailed in the written HASP and shall include, but not be limited to the following:

(A) Directing and implementing the HASP;

(B) Ensuring that all Project personnel have been adequately trained in the recognition and avoidance of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury (29 CFR 1926.21). All personnel shall be adequately trained in procedures outlined in the Contractor's written HASP;

(C) Authorizing Stop Work Orders which shall be executed upon the determination of an imminent health and safety concern;

(D) Contacting the Contractor's HSM and the Engineer immediately upon the issuance of a Stop Work order when the HSO has made the determination of an imminent health and safety concern;

(E) Authorizing work to resume, upon approval from the Contractor's HSM;

(F) Directing activities, as defined in the Contractor's written HASP, during emergency situations; and

(G) Providing personal monitoring where applicable, and as identified in the HASP.

(iv) Employee Training Assignments: The Contractor shall develop a training program to inform employees, supplier's representatives, and official visitors of the special hazards and procedures (including PPE, its uses and inspections) to control these hazards during field operations. Official visitors include but are not limited to Federal Agency Representatives, State Agency Representatives, Municipal Agency Representatives, Contractors, subcontractors, etc. This program shall be consistent with the requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

(v) Personal Protective Equipment: The plan shall include the requirements and procedures for employee protection and should include a detailed section on respiratory protection. The Contractor shall describe in detail and provide appropriate personal protective equipment (PPE) to insure that workers are not exposed to levels greater than the action level for identified hazards for each operation stated for each work zone. The level of protection shall be specific for each operation and shall be in compliance with all requirements of 29 CFR 1910 and 29 CFR 1926. The Contractor shall provide, maintain, and properly dispose of all PPE.

(vi) Medical Surveillance Program: All on-site Contractor personnel engaged in 29 CFR 1910.120/1926.65 operations shall have medical examinations meeting the requirements of 29 CFR 1910.120(f) prior to commencement of work.

The HASP shall include certification of medical evaluation and clearance by the physician for each employee engaged in 29 CFR 1910.120/1926.65 operations at the site.

(vii) Exposure Monitoring/Air Sampling Program: The Contractor shall submit an Air Monitoring Plan as part of the HASP which is consistent with 29 CFR 1910.120, paragraphs (b)(4)(ii)(E), (c)(6), and (h). The Contractor shall identify specific air sampling equipment, locations, and frequencies in the air-monitoring plan. Air and exposure monitoring requirements shall be specified in the Contractor's HASP. The Contractor's CIH shall specify exposure monitoring/air sampling requirements after a careful review of the contaminants of concern and planned site activities.

(viii) Site Layout and Control: The HASP shall include a map, work zone delineation (support, contamination, reduction and exclusion), on/off-site communications, site access controls, and security (physical and procedural).

(ix) Communications: Written procedures for routine and emergency communications procedures shall be included in the Contractor's HASP.

(x) Personal Hygiene, Personal Decontamination and Equipment Decontamination: Decontamination facilities and procedures for personnel protective equipment, sampling equipment, and heavy equipment shall be discussed in detail in the HASP.

(xi) Emergency Equipment and First Aid Requirements: The Contractor shall provide appropriate emergency first aid kits and equipment suitable to treat exposure to the hazards identified, including chemical agents. The Contractor will provide personnel that have certified first aid/CPR training on-site at all times during site operations.

(xii) Emergency Response Plan and Spill Containment Program: The Contractor shall establish procedures in order to take emergency action in the event of immediate hazards (i.e., a chemical agent leak or spill, fire or personal injury). Personnel and facilities supplying support in emergency procedures will be identified. The emergency equipment to be present on-site and the Emergency Response Plan procedures, as required 29 CFR 1910.120, paragraph (1)(1)(ii) shall be specified in the Emergency Response Plan. The Emergency Response Plan shall be included as part of the HASP. This Emergency Response Plan shall include written directions to the closest hospital as well as a map showing the route to the hospital.

(xiii) Logs, Reports and Record Keeping: The Contractor shall maintain safety inspections, logs, and reports, accident/incident reports, medical certifications, training logs, monitoring results, etc. All exposure and medical monitoring records are to be maintained according to 29 CFR 1910 and 29 CFR 1926. The format of these logs and reports shall be developed by the Contractor to include training logs, daily logs, weekly reports, safety meetings, medical surveillance records, and a phase-out report. These logs, records, and reports shall be maintained by the Contractor and be made available to the Engineer.

The Contractor shall immediately notify the Engineer of any accident/ incident. Within two working days of any reportable accident, the Contractor shall complete and submit to the Engineer an accident report.

(xiv) Confined space entry procedures: Confined space entry procedures, both permit required and non permit required, shall be discussed in detail.

(xv) Pre-entry briefings: The HASP shall provide for pre-entry briefings to be held prior to initiating any site activity and at such other times as necessary to ensure that employees are apprised of the HASP and that this plan in being followed.

(xvi) Inspections/audits: The HSM or HSO shall conduct Inspections or audits to determine the effectiveness of the HASP. The Contractor shall correct any deficiencies in the effectiveness of the HASP.

6-HASP Implementation: The Contractor shall implement and maintain the HASP throughout the performance of work. In areas identified as having a potential risk to worker health and safety, and in any other areas deemed appropriate by the HSO, the Contractor shall be prepared to immediately implement the appropriate health and safety measures, including but not limited to the use of personal protective equipment (PPE), and engineering and administrative controls.

If the Engineer observes deficiencies in the Contractor’s operations with respect to the HASP, they shall be assembled in a written field directive and given to the Contractor. The Contractor shall immediately correct the deficiencies and respond, in writing, as to how each was corrected. Failure to bring the work area(s) and implementation procedures into compliance will result in a Stop Work Order and a written directive to discuss an appropriate resolution(s) to the matter. When the Contractor demonstrates compliance, the Engineer shall remove the Stop Work Order. If a Stop Work Order has been issued for cause, no delay claims on the part of the Contractor will be honored.

Disposable CPC/PPE, i.e. disposable coveralls, gloves, etc., which come in direct contact with hazardous or potentially hazardous material shall be placed into 55 gallon USDOT 17-H drums and disposed of in accordance with Federal, State, and local regulations. The drums shall be temporarily staged and secured within the designated WSA until the material is appropriately disposed.

7-HASP Revisions: The HASP shall be maintained on-site by the Contractor and shall be kept current with construction activities and site conditions under this Contract. The HASP shall be recognized as a flexible document which shall be subject to revisions and amendments, as required, in response to actual site conditions, changes in work methods and/or alterations in the relative risk present. All changes and modifications shall be signed by the Contractor's HSM and shall require the review and acceptance by the Engineer prior to the implementation of such changes.

Should any unforeseen hazard become evident during the performance of the work, the HSO shall bring such hazard to the attention of the Contractor and the Engineer as soon as possible. In the interim, the Contractor shall take action, including Stop Work Orders and/or upgrading PPE as necessary to re-establish and maintain safe working conditions and to safeguard on-site personnel, visitors, the public and the environment. The HASP shall then be revised/amended to reflect the changed condition.

Method of Measurement:

1-Within thirty (30) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for acceptance a breakdown of its lump sum bid price for this item detailing:

(a) The development costs associated with preparing the HASP in accordance with these Specifications.

(b) The cost per month for the duration of the Project to implement the HASP and provide the services of the HSM and the HSO.

2-If the lump sum bid price breakdown is unacceptable to the Engineer; substantiation showing that the submitted costs are reasonable shall be required.

3-Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:

(a) The lump sum development cost will be certified for payment.

(b) The Contractor shall demonstrate to the Engineer monthly that the HASP has been kept current and is being implemented and the monthly cost will be certified for payment.

(c) Any month where the HASP is found not to be current or is not being implemented, the monthly payment for the Environmental Health and Safety Item shall be deferred to the next monthly payment estimate. If the HASP is not current or not being implemented for more than thirty calendar days, there will be no monthly payment.

(d) **Failure of the Contractor to implement the HASP in accordance with this Specification shall result in the withholding of all Contract payments.**

Basis of Payment:

This work will be paid for at the Contract lump sum price for “Environmental Health and Safety” which price shall include all materials, tools, equipment and labor incidental to the completion of this item for the duration of the Project to maintain, revise, monitor and implement the HASP. Such costs include providing the services of the HSM and HSO, Contractor employee training, chemical protective clothing (CPC), personal protective equipment (PPE), disposal of PPE and CPC, medical surveillance, decontamination facilities, engineering controls, monitoring and all other HASP protocols and procedures established to protect the Health and Safety for all on-site workers.

Pay Item	Pay Unit
Environmental Health and Safety	L.S.

ITEM #0101117A – CONTROLLED MATERIALS HANDLING

Description:

Work under this Item is intended to provide specific procedural requirements to be followed by the Contractor during the excavation of controlled materials from within any Areas of Environmental Concern (AOEC's) and Low-Level Areas of Environmental Concern (LL-AOEC's), as shown on the Project Plans. This supplements Specifications Section 2.02, 2.03, 2.05, and 2.06 and Contract Special Provisions for excavation wherever contaminated materials are encountered. Work under this item shall include transporting and stockpiling materials at the Waste Stockpile Area (WSA); and covering, securing, and maintaining the stockpiled materials throughout the duration of the Project. All materials, excluding the existing pavement structure (asphalt and sub-base), rock, ledge, and concrete excavated within AOEC's and LL-AOEC's are to be considered controlled materials.

Controlled materials consisting of regulated substances at non-hazardous concentrations have been identified within the Project Limits. Such contamination is documented in the reports listed in the "Notice to Contractor – Environmental Investigations". Contaminated soils excavated from within the AOEC's will require special handling, off-site disposal and documentation procedures. Contaminated soils excavated from within the LL-AOEC's may be re-used on-site for backfill. However, if material excavated from within the LL-AOEC's is not used for backfill on-site (excess material), the soil will require special handling, off-site disposal and documentation procedures.

Materials:

The required materials are detailed in the Construction Documents. All materials shall conform to the requirements of the Contract.

Plastic Sheet: Polyethylene plastic sheeting for underlayment shall be at least 30 mil thick. Polyethylene plastic sheeting for covering excavated material shall be a thickness of 10 mil. Both shall be at least 10 feet wide.

Covers for roll-off/storage containers shall be made of polyethylene plastic, or similar watertight material, that is of sufficient size to completely cover top opening and can be securely fastened to the container.

Sand Bags: Sandbags used to secure polyethylene covers shall be at least 30 pounds.

Sorbent Boom: Shall be 8 inches in diameter and 10 feet long and possess hydrophobic properties. Sorbent booms shall also have devices (i.e. clips, clasps, etc.) for connection to additional lengths of boom.

Construction Methods:

A. General

When controlled materials are encountered during the course of the work, health and safety provisions shall conform to the appropriate sections of the Contract. Provisions may include implementation of engineering controls, air and personal monitoring, the use of chemical protective clothing (CPC), personal protective equipment (PPE), implementation of engineering controls, air and personal monitoring, and decontamination procedures.

Unless otherwise directed by the Engineer, materials removed from any excavation within an AOEC and LL-AOEC shall be transported directly from their point of origin on the Project to the WSA. Separate stockpiles of each AOEC and each LL-AOEC shall be maintained. The Contractor shall plan excavation activities within AOEC's and LL-AOEC's in consideration of the capacity of WSAs, and the material testing and disposal requirements of the applicable Contract item. **No claims for delay shall be considered based on the Contractor's failure to coordinate excavation activities as specified herein.**

Controlled material excavated from the LL-AOEC's may be reused on-site. However, in the event this material cannot be re-used on-site, it shall be sampled, characterized, and transported off-site to a suitable treatment/recycling/disposal facility. The Engineer will sample the stockpiled controlled materials at a frequency and for the constituents to meet the acceptance criteria of the treatment/recycling/disposal facilities submitted by the Contractor. The Contractor is hereby notified that laboratory turnaround time is expected to be fifteen (15) working days. Turnaround time is the period of time beginning when the Contractor notifies the Engineer which laboratory facility it intends to use and that the stockpile is ready for sampling and ending with the Contractor's receipt of the laboratory analytical results. Any change of intended treatment/recycling/disposal facility may prompt the need to resample and will therefore restart the time required for laboratory turnaround. The laboratory will furnish such results to the Engineer. Upon receipt, the Engineer will make available to the Contractor the results of the final waste characterization determinations. **No delay claim will be considered based upon the Contractor′s failure to accommodate the laboratory turnaround time as identified above.**

B. Transportation and Stockpiling

In addition to following all pertinent Federal, State and local laws or regulatory agency policies, the Contractor shall adhere to the following precautions during transport of non-hazardous materials:

- Transported controlled materials are to be covered prior to leaving the point of generation and are to remain covered until the arrival at the WSA;
- All vehicles departing the site are properly logged to show the vehicle identification, driver's name, time of departure, destination, and approximate volume and content of materials carried;

- All vehicles shall have secure, watertight containers free of defects for material transportation;
- No material shall leave the site until there is adequate lay down area prepared in the WSA; and,
- Documentation must be maintained indicating that all applicable laws have been satisfied and that the materials have been successfully transported and received at the WSA.

Construction of the WSA shall be completed prior to the initiation of construction activities generating Controlled Materials. Plastic polyethylene sheeting shall underlay all excavated controlled materials. Measures shall be implemented to divert rainfall away from the WSA.

No controlled materials shall be excavated or transported to the WSA until registration under the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) has been obtained by ConnDOT.

Placement of sorbent boom along the perimeter of the WSA shall be conducted when soil is saturated with petroleum product.

Excavated materials shall be staged as shown on the Project Plans or as directed by the Engineer.

C. WSA Maintenance

The Contractor shall provide all necessary materials, equipment, tools and labor for anticipated activities within the WSA. Such activities include, but are not limited to, handling and management of stockpiles and drummed CPC/PPE; uncovering and recovering stockpiles; maintenance of WSA; replacement of damaged components (i.e. sand bags, plastic polyethylene sheeting, etc.); and waste inventory record management. The Contractor shall manage all materials in the WSA in such a way as to minimize tracking of potential contaminated materials across the site and off-site, and minimize dust generation.

Each stockpile shall be securely covered when not in active use with a cover of sufficient size to prevent generation of dust and infiltration of precipitation. The cover shall also be to prevent wind erosion.

The staged stockpiles shall be inspected at least daily by the Contractor to ensure that the cover and containment have not been damaged and that there is no apparent leakage from the pile(s). If the cover has been damaged, or there is evidence of leakage from the piles, the Contractor shall immediately replace the cover or containment as needed to prevent the release of materials to the environment from the piles.

An inventory of stockpiled materials and drummed CPC/PPE shall be conducted on a daily basis. Inventory records shall indicate the approximate volume of material/drums stockpiled per day; the approximate volume of material/drums stockpiled to date; material/drums loaded and transported off-site for disposal; any materials loaded and transported for on-site reuse; and identification of stockpiles relative to their points of generation.

Following the removal of all stockpiled controlled materials, residuals shall be removed from surfaces of the WSA as directed by the Engineer. This operation shall be accomplished using dry methods such as shovels, brooms, mechanical sweepers or a combination thereof. Residuals shall be disposed of as Controlled Materials.

D. Dewatering

Dewatering activities shall conform to Items in pertinent articles of the Contract.

E. Decontamination

All equipment shall be provided to the work site free of contamination. The Engineer may prohibit from the site any equipment that in his opinion has not been thoroughly decontaminated prior to arrival. Any decontamination of the Contractor’s equipment prior to arrival at the site shall be at the expense of the Contractor. The Contractor is prohibited from decontaminating equipment on the Project that has not been thoroughly decontaminated prior to arrival.

The Contractor shall furnish labor, materials, tools and equipment for decontamination of all equipment and supplies that are used to handle Controlled Materials. Decontamination shall be conducted at an area designated by the Engineer and may be required prior to equipment and supplies leaving the Project, between stages of the work, or between work in different AOEC’s or LL-AOEC’s.

Dry decontamination procedures are recommended. Residuals from dry decontamination activities shall be collected and managed as Controlled Materials. If dry methods are unsatisfactory as determined by the Engineer, the Contractor shall modify decontamination procedures as required subject to the Engineer’s approval.

F. Dust Control

The Contractor shall implement a fugitive dust suppression program in accordance with the Contract to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading and operations associated with Controlled Materials. It shall be the Contractor’s responsibility to supervise fugitive dust control measures and to monitor airborne particulate matter. The Contractor shall:

1. Employ reasonable fugitive dust suppression techniques.

   Visually observe the amounts of particulate and/or fugitive dust generated during the handling of controlled materials. If the apparent amount of fugitive dust and/or particulate matter is not acceptable to the Engineer, the Engineer may direct the Contractor to implement corrective measures at his discretion, including, but not limited to, the following:

(a) apply water to pavement surfaces;

(b) apply water to equipment and excavation faces; and

(c) apply water during excavation, loading and dumping.

G. Permit Compliance

The Contractor shall comply with the terms and conditions of the CTDEEP “General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)”, including the General Operating Conditions and the Specific Operating Conditions, except that the Engineer will conduct all soil/sediment characterization and perform all record keeping. In particular, the Contractor shall:

1. Operate, maintain and repair the WSA in conformance with the requirements of the General Permit;
2. Maintain a communications system capable of summoning fire, police, and/or other emergency service personnel in the event of emergencies;
3. Prevent unauthorized entry onto the stockpiles by the use of fences, gates, or other natural or artificial barriers;
4. Separate incidental excavation waste to the satisfaction of the receiving facility or to an extent that renders the contaminated soil and/or sediment suitable for its intended reuse;
5. Isolate and temporarily store incidental waste in a safe manner prior to off-site transport to a facility lawfully authorized to accept such waste;
6. Not store more that 100 cubic yards of incidental waste at any one time;
7. Sort, separate and isolate all hazardous waste from contaminated soil and/or sediment;
8. Prevent or minimize the transfer or infiltration of contaminants from the stockpiles to the ground as detailed in “B. Transportation and Stockpiling” above;
9. Securely cover each stockpile of soil as detailed in “C. WSA Maintenance” above;
10. Minimize wind erosion and dust transport as detailed in “F. Dust Control” above;
11. Use anti-tracking measures at the WSA to ensure the vehicles do not track soil from the WSA onto a public roadway at any time;
12. Instruct the transporters of all materials (contaminated soil, sediment, incidental excavation waste, etc.) of best management practices for the transportation of such soil (properly covered loads, removing loose material from dump body, etc.);
13. Control all traffic related to the operation of the facility in such a way as to mitigate the queuing of vehicles off-site and excessive or unsafe traffic impact in the area where the facility is located; and

14. Ensure that except as allowed in section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies, trucks are not left idling for more than three (3) consecutive minutes.

Method of Measurement:
The work of Controlled Material Handling will be measured for payment by the number of cubic yards (CY) of controlled material excavated within the AOEC's and LL-AOEC's taken to the WSA. This measurement shall be in accordance with and in addition to the quantity measured for payment of the applicable excavation item in Specification Sections 2.02, 2.03, 2.05, 2.06, or the Contract Special Provisions, as applicable. Excess excavations made by the Contractor beyond the payment limits specified in the Contract will not be measured for payment and the Contractor assumes all costs associated with the appropriate handling, management and disposal of this material.

Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.

Basis of Payment:

This work shall be paid for at the Contract unit price, which shall include all transportation from the excavation site to the final WSA, including any intermediate handling steps; stockpiling controlled materials at the WSA; covering, securing, and maintaining the individual stockpiles within the WSA throughout the duration of the Project; and all tools, equipment, material and labor incidental to this work.

This price shall also include equipment decontamination; the collection of residuals generated during decontamination and placement of such material in the WSA; and the collection and disposal of liquids generated during equipment decontamination activities.

All materials, labor and equipment associated with compliance with the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) will not be measured separately, but will be considered incidental to the item "Controlled Materials Handling".

Securing, construction and dismantling of the WSA shall be paid for under Item No. 101128A. Handling and disposal of contaminated groundwater will be paid for under Item No. 0204210A. Payment for dust control activities shall be made under the appropriate Contract items.

Pay Item	Pay Unit
Controlled Materials Handling	Cubic Yards (CY)

ITEM #0101128A – SECURING, CONSTRUCTION AND DISMANTLING OF A WASTE STOCKPILE AND TREATMENT AREA

Description:
Work under this Item shall consist of the securing, construction and dismantling of the temporary Waste Stockpile Area (WSA) in accordance with the Contract. All controlled materials excavated during construction activities shall be stockpiled in the WSA. The WSA shown on the aerial map within these specifications is to be used exclusively for temporary stockpiling of excavated materials from within Project AOEC's and LL-AOEC'S for determination of disposal characterization.

Materials:
All materials shall conform to the requirements of the Contract. Construction blocks shall be solid precast rectangular concrete 6 feet in length, 3 in width, and 2 feet in height.

Polyethylene plastic sheeting for underlayment shall be a thickness of 30 mil and minimum width of ten feet. Sand bags used to secure polyethylene sheeting soil covers shall have a minimum weight of thirty pounds.

Bedding sand shall conform to Section 6.51.02 of the Specifications. Processed Aggregate Base shall conform to Section 3.04.02 of the Specifications. Hay bales shall conform to the Requirements of Section 2.18.02 of the Specifications. Bituminous Concrete shall conform to Section 4.06.02 of the Specifications. Roll-off/Storage Containers shall be of watertight, steel-body construction, of the size specified and able to handle the storage and subsequent transportation of material to the disposal facility. Precast Concrete Barrier Curb shall conform to Section 8.22 of the Specifications.

Construction Methods:

The WSA shall be constructed in accordance with the Contract at the location shown on the project drawings.

Construction of the WSA shall be completed prior to the initiation of construction activities generating Controlled Materials. The Contractor is responsible for the maintenance and protection of all utilities potentially affected during WSA construction. The Contractor shall locate and mark all existing utilities potentially affected prior to initiating WSA construction.

The proposed location of the WSA shall be cleared of any debris and vegetation as directed by the Engineer. Any objectionable materials, which may result in damage to the polyethylene sheeting underlayment, shall be removed prior to stockpiling excavated controlled materials.

The Contractor shall comply with the terms and conditions of the Connecticut Department of Energy and Environmental Protection (CTDEEP) "General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)", including the General Operating Conditions and the Specific Operating Conditions, except that the Engineer will conduct all soil/sediment characterization and perform all record keeping. In particular, the Contractor shall:

1. Construct and repair the WSA in conformance with the requirements of the General Permit.
2. Prevent unauthorized entry onto the stockpiles by the use of fences, gates, or other natural or artificial barriers.
3. Install anti-tracking measures at the WSA to ensure the vehicles do not track soil from the WSA onto a public roadway at any time.
4. Post and maintain a sign that is visible from a distance of at least 25' at the WSA identifying the name of the permittee (State of Connecticut Department of Transportation), the DOT field office phone number, the hours of operation for the WSA, and the phrase, "Temporary Soil Staging Area". Lettering shall be at least one inch (1") high with a minimum overall sign dimension of four (4) feet wide by two (2) feet high. Such sign is only required if the capacity of the WSA is equal to or greater than 1,000 cubic yards (c.y.). If initially the WSA capacity is less than 1,000 c.y. and the WSA capacity is subsequently increased, the Contractor shall post and maintain the required sign at no additional cost to the State, prior to stockpiling the additional material.

Following the removal of all stockpiled material, the Contractor shall use dry decontamination procedures for all surfaces of the WSA as directed by the Engineer. Residual materials shall be disposed of as Controlled Materials. If the results from dry methods are unsatisfactory to the Engineer, the Contractor shall modify decontamination procedures as required.

The Contractor shall be responsible for the collection and treatment/recycling/disposal of any liquid wastes that may be generated by its decontamination activities in accordance with applicable regulations.

Upon completion of the Project and following removal of all residual Controlled Materials, the Contractor shall dismantle the WSA and return the area to original condition. During dismantling, the Contractor shall remove all materials such as polyethylene sheeting and sand bags. Materials shall be disposed of by the Contractor as solid waste in accordance with the Contract and all Federal, State and local regulations.

Operation and maintenance of the WSA shall be included under Item 101117A "Controlled Material Handling".

Method of Measurement:

This work will be measured for payment at the Lump Sum cost for securing, construction, and dismantling of a WSA.

Basis of Payment:

This work will be paid for at the Contract Lump Sum, which shall include all materials, tools, labor, equipment, permits, and work needed to secure, construct, decontaminate and dismantle the WSA, including all clearing, grubbing, grading, cleanup, site restoration and seeding.

All materials, labor and equipment associated with compliance with the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) will not be measured separately, but will be considered incidental to the item "Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area".

Pay Item	Pay Unit
Securing, Construction and Dismantling Of a Waste Stockpile and Treatment Area	L.S.

ITEM #0101130A – ENVIRONMENTAL WORK - SOLIDIFICATION

Description:

Under this item, the Contractor shall be responsible for the solidification of controlled materials containing free-draining liquids, as may be necessary during the performance of work operations prior to off-site disposal. Materials shall be dewatered prior to the addition of solidification material.

The Contractor shall submit within seven (7) days of the Notice to Proceed, for the Engineer's review, a detailed methodology and plan of operation for the solidification of materials.

Materials:

The materials used for solidification shall be a naturally occurring material such as diatomaceous earth or other material as approved by the Engineer. Said material shall be in a dry state prior to use in solidification operations. No polymers or other synthetic materials shall be allowed.

Construction Methods:

Submittals: The Contractor shall submit for the Engineer's review a plan showing the location of solidification material storage and proposed mixing location as well as a detailed narrative describing the equipment, materials and methodology to be used. The Contractor shall also include its planned methods to remove or drain away free water prior to the addition of any solidification materials to controlled or hazardous materials. The methodology shall completely describe the Contractor's proposed plan for removal of free liquids (as determined by ASTM) from the excavated materials. Should solidification fail to eliminate free liquids as proposed, the Contractor will be required to revise the solidification plan at no additional cost to the State.

Upon visual examination, if controlled materials have free liquids present, the Contractor may, with concurrence of the Engineer, add dry materials to absorb free-standing liquids, utilizing a methodology accepted by the Engineer. The Contractor shall dewater controlled materials prior to the addition of solidification materials to the satisfaction of the Engineer. All dewatering fluids shall be handled in accordance with the Contract. Solidification procedures shall be subject to monitoring by the Engineer.

The maximum quantity of solidification material that may be used by the Contractor shall be limited to twenty (20) percent, by volume, of the material being solidified. Should this procedure be demonstrated as not effective in the elimination of the presence of free-standing liquids, the Contractor shall submit methods for the removal of free-standing liquids. The Contractor shall also submit the additional costs of the proposed alternative to the Engineer for review. No alternative methods of solidification shall be initiated until reviewed and accepted by the Engineer.

Method of Measurement:

This work will be measured for payment as the actual weight of solidification material used by the Contractor. The Contractor shall demonstrate the amount of solidification material used by the original weight tickets from a certified scale. The weight tickets shall show the weight of the material brought to the site and subsequently used in solidification operations.

If no certified scale is available, the Engineer may allow for the calculation of the weight by a summation of sealed, pre-measured bags.

Basis of Payment:

This work will be paid for at the Contract unit price for solidification material used and accepted by the Engineer. Such price shall include all labor, materials, tools, and equipment incidental to the work including transportation of the materials to the Project and the addition of solidification material to excavated materials.

Pay Item	Pay Unit
Environmental Work -Solidification	Ton

ITEM #0202315A – DISPOSAL OF CONTROLLED MATERIALS

Description:

Work under this item shall consist of the loading, transportation and final off-site disposal/ recycling/treatment of controlled materials (excluding dewatering fluids) that have been generated from various excavations within the Areas of Environmental Concern (AOEC's) and Low-Level Areas of Environmental Concern (LL-AOEC's), brought to the Waste Stockpile Area (WSA), and determined to be contaminated with regulated substances at non-hazardous concentrations. This contamination is documented in the reports listed in the "Notice to Contractor – Environmental Investigations". The controlled materials, after proper characterization by the Engineer, shall be taken from the WSA, loaded, transported to and treated/recycled/disposed of at a permitted treatment/recycle/disposal facility (TDRF) listed herein.

The Contractor must use one or more of the following Department-approved TDRF's for the disposal of non-hazardous materials:

ESMI of New Hampshire Attn: Stephen Raper 67 International Drive Loudon, NH 03307 Phone: (603) 783-0228 Fax: (603) 783-0104	ESMI of New York Attn: Peter Hansen 304 Towpath Road Fort Edward, New York 12828 Phone: (518) 747-5500 Fax: (518) 747-1181
Hazelton Creek Properties* Attn: Allen Swantek 280 South Church Street Hazelton, PA 18201 Phone: (570) 207-2000 Fax: (570) 457-3395	Waste Management – Chicopee Landfill Attn: Thomas Murray 161 New Lombard Road Chicopee, MA 01020 Phone: (413) 534-8741 Fax: (413) 493-1547
Soil Safe, Inc. Attn: Paula Duca 378 Route 130, Logan Township Bridgeport, NJ 08085 Phone: (410) 872-3990 ext. 1121 Fax: (410) 872-9082	Cranston Sanitary Landfill Attn: Paul Mahoney 1690 Pontiac Avenue Cranston, RI 02920 Phone: (413) 552-3688 Fax: (413) 552-3330
Southbridge Recycling and Disposal Park Attn: Scott Sampson 165 Barefoot Road Southbridge, MA 01550 Phone: (603) 235-3597 Fax: (508) 765-6812	Ted Ondrick Company, LLC Attn: Dave Costanzo 58 Industrial Drive Chicopee, MA 01020 Phone: (413) 592-2566 Fax: (413) 592-7451

*-Please note that if this facility is to be used, each bin letter will require an additional 10 day (or more) waiting period in addition to the 15 day lab period (specified in Section B) to allow for Pennsylvania Department of Environmental Protection (PADEP) review.

Construction Methods:

A. Submittals

The apparent low bidder shall submit in writing, within fourteen (14) days after Bid opening, (1) a letter listing the names of the treatment/recycle/disposal facilities (from the list above) which the bidder, if it is awarded the Contract, will use to receive controlled material from this Project, (2) a copy of the attached "Disposal Facility Material Acceptance Certification" form from each facility, which shall be signed by an authorized representative of each treatment/recycle/disposal facility, and (3) a copy of the facility acceptance criteria and facility sampling frequency requirements from each facility.

Any other Contractor which the Department may subsequently designate as the apparent low bidder shall make the aforementioned submissions within fourteen (14) days from the date on which the Department notifies the Contractor that it has become the apparent low bidder. If, however, the Department deems it is necessary for such a subsequent-designated Contractor to make said submissions within a shorter period of time, the Contractor shall make those submissions within the time designated by the Department.

Failure to comply with all of the above requirements may result in the rejection of the bid.

No facility may be substituted for the one(s) designated in the Contractor's submittal without the Engineer's prior approval. If the material cannot be accepted by any of the Contractor's designated facilities, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Disposal Facility Materials Acceptance Certification

Project Number: ________________________________

Project Location: ________________________________

Facility Name: ________________________________ Telephone: __________________

Facility Address: ________________________________ Fax: __________________

The Contractor has supplied the analytical data contained in the report concerning the site investigation performed by the Designer. I have personally reviewed this data and intend to accept the following:

Controlled materials as described in Item # 0202315A "Disposal of Controlled Materials" for the subject Project at a cost of $__________ per ton for treatment/disposal and an additional $__________ per ton for transportation from the Project to the facility (if applicable).

This intent to accept the material will be subject to and dependent upon the facility's subsequent evaluation of waste characterization determination documentation to be provided to the Contractor by the Engineer.

Authorized Facility Representative:

__________________________ /

____________________ Printed/Typed Name Title

__________________________ /

____________________ Signature Date

Note: The facility shall attach the acceptance criteria and facility sampling frequency requirements to this document.

DO NOT ALTER FORM IN ANY WAY. FORM MUST BE COMPLETED IN ENTIRETY.

B. Material Disposal

The Engineer will sample materials stored at the WSA at a frequency established by the selected treatment/recycling/disposal facilities. The Contractor shall designate to the Engineer which facility it intends to use prior to samples being taken. The Contractor is hereby notified that laboratory turnaround time is expected to be fifteen (15) working days. Turnaround time is the period of time beginning when the Contractor notifies the Engineer which laboratory facility it intends to use and that the bin within the WSA is full and ready for sampling and ending with the Contractor's receipt of the laboratory analytical results. Any change of intended treatment/recycling/disposal facility may prompt the need to resample and will therefore restart the time required for laboratory turnaround. The laboratory will furnish such results to the Engineer. Upon receipt, the Engineer will make available to the Contractor the results of the final waste characterization determinations. **No delay claim will be considered based upon the Contractor's failure to accommodate the laboratory turnaround time as identified above.**

The Contractor shall obtain and complete all paperwork necessary to arrange for material disposal (such as disposal facility waste profile sheets). It is solely the Contractor's responsibility to co-ordinate the disposal of controlled materials with its selected treatment/recycling/disposal facility(s). Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and treatment/recycling/disposal of the materials in accordance with all Federal and State regulations. **No claim will be considered based on the failure of the Contractor's selected disposal facility(s) to meet the Contractor's production rate or for the Contractor's failure to select sufficient facilities to meet its production rate.**

All manifests or bills of lading utilized to accompany the transportation of the material shall be prepared by the Contractor and signed by an authorized Department representative, as Generator, for each truck load of material that leaves the site. The Contractor shall forward the appropriate <u>original copies</u> of all manifests or bills of lading to the Engineer the same day the material leaves the Project.

A load-specific certificate of treatment/recycling/disposal, signed by the authorized agent representing the disposal facility, shall be obtained by the Contractor and promptly delivered to the Engineer for each load.

C. Material Transportation

In addition to all pertinent Federal, State and local laws or regulatory agency polices, the Contractor shall adhere to the following precautions during the transport of controlled materials off-site:

1. Transported controlled materials are to be covered sufficiently to preclude the loss of material during transport prior to leaving the site and are to remain covered until the arrival at the selected TDRF.

2. All vehicles departing the site are to be properly logged to show the vehicle identification, driver's name, time of departure, destination, approximate volume and contents of materials carried.
3. No materials shall leave the site unless a TDRF willing to accept the material being transported has agreed to accept the type and quantity of waste.

D. Equipment Decontamination

All equipment shall be provided to the work site free of gross contamination. The Engineer may prohibit from the site any equipment that in his opinion has not been thoroughly decontaminated prior to arrival. Any decontamination of the Contractor's equipment prior to arrival at the site shall be at the expense of the Contractor. The Contractor is prohibited from decontaminating equipment on the Project that has not been thoroughly decontaminated prior to arrival.

The Contractor shall furnish labor, materials, tools and equipment for decontamination of all equipment and supplies that are used to handle Controlled Materials. Decontamination shall be conducted at an area designated by the Engineer and shall be required prior to equipment and supplies leaving the Project, between stages of the work, and between work in different AOEC's or LL-AOEC'S.

The Contractor shall use dry decontamination procedures. Residuals from dry decontamination activities shall be collected and managed as Controlled Materials. If the results from dry methods are unsatisfactory to the Engineer, the Contractor shall modify decontamination procedures as required.

The Contractor shall be responsible for the collection and treatment/recycling/disposal of any liquid wastes that may be generated by its decontamination activities in accordance with applicable regulations.

Method of Measurement:

The work of "DISPOSAL OF CONTROLLED MATERIALS" will be measured for payment as the actual net weight in tons of material delivered to the treatment/recycling/disposal facility. Such determinations shall be made by measuring each hauling vehicle on the certified permanent scales at the treatment/recycling/disposal facility. Total weight will be the summation of weight bills issued by the facility specific to this Project. Excess excavations made by the Contractor beyond the payment limits specified in Specification Sections 2.02, 2.03, 2.05, 2.06, or the Contract Special Provisions (as appropriate) will not be measured for payment and the Contractor assumes responsibility for all costs associated with the appropriate handling, management and disposal of this material.

The disposal of excavated materials, originally anticipated to be Controlled Materials, but determined by characterization sampling <u>not</u> to contain regulated chemicals at minimum regulated concentrations (non-polluted or "clean" materials) will <u>not</u> be measured for payment under this item but will be considered as surplus excavated materials and will be paid in accordance with Article 1.04.05.

Any materials, which are determined through characterization sampling to be contaminated but reusable in accordance with the Remediation Standard Regulations (RSRs), and which are reused within Project limits, will not be measured for payment under this item. This material will be paid for under Item No. 0202318A – “Management of Reusable Controlled Material” or in accordance with Article 1.04.05 in the item’s absence. Only surplus material which is not reused onsite will be managed and paid for under this Item.

Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.

Basis of Payment:

This work will be paid for at the Contract unit price, which shall include the loading and transportation of controlled materials from the WSA to the treatment/recycling/disposal facility; the fees paid to the facility for treatment/recycling/disposal; the preparation of all related paperwork; and all equipment, materials, tools, and labor incidental to this work. **This unit price will be applicable to all of the Contractor-selected disposal facilities and will not change for the duration of the Project.**

This price shall also include equipment decontamination; the collection of residuals generated during decontamination and placement of such material in the WSA; and the collection and disposal of liquids generated during equipment decontamination activities.

Pay Item	Pay Unit
Disposal of Controlled Materials	Ton

ITEM #0202318A – MANAGEMENT OF REUSABLE CONTROLLED MATERIALS

Description:

Work under this item shall include all materials, equipment, tools and labor required to load, transport from the Waste Stockpile Area (WSA), place, and compact reusable controlled materials from Low-Level Areas of Environmental Concern (LL-AOEC's), as shown on the Project Plans in fill areas located within the Project limits. "Reusable controlled material" is soil that contains contaminant concentrations above analytical detection limits, but below the applicable regulatory criteria.

Construction Methods:

Controlled material stored within the WSA which is determined to be reusable following analytical testing shall be loaded, transported, placed and compacted at fill areas located within the Project limits in accordance with the following conditions: (1) such soil is deemed to be structurally suitable for use as fill by the Engineer; (2) such soil is not placed below the water table; 3) the CTDEEP groundwater classification of the area where the soil is to be reused as fill does not preclude said reuse; and (4) such soil is not placed in an area subject to erosion.

Method of Measurement:

"Management of Reusable Controlled Material" will be measured for payment by the number of cubic yards of material loaded and transported from the WSA and placed at fill areas located within the Project limits in accordance with the Contract.

Basis of Payment:

"Management of Reusable Controlled Material" will be paid for at the Contract unit price, which shall include all materials, equipment, tools and labor necessary to load and transport reusable controlled materials from the WSA to fill areas located within the Project limits and to place and compact the reusable material. This price shall include any decontamination of soil handling equipment, and the treatment/recycling/disposal of wastes generated in conjunction with such decontamination.

No separate payment will be made for consolidating previously tested individual stockpiles that have been deemed reusable, but shall be considered incidental to the work.

The disposal of any reusable controlled material that fails to meet material testing requirements for the intended use in accordance with the Contract requirements, as well as any excess reusable material, will be paid under Item No. 202315A, "Disposal of Controlled Material".

Pay Item	Pay Unit
Management of Reusable Controlled Materials	C.Y.

ITEM #0204213A – HANDLING CONTAMINATED GROUNDWATER

Description:

Under this Item, the Contractor shall collect, manage, treat, and dispose of contaminated groundwater generated during dewatering operations within the designated Groundwater Area of Environmental Concern (GW-AOEC) within the project limits.

Contaminated groundwater is defined as "groundwater which has been generated from excavations within the designated GW-AOEC containing substances at concentrations that exceed the effluent limits for the CTDEEP *General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water*". The presence of contaminants removable through control of settleable solids does not constitute contaminated groundwater. Groundwater contamination caused by the Contractor's activities or work practices is also not considered contaminated groundwater.

The contamination and groundwater depth at the time of the investigation is documented in the reports listed in the "Notice to Contractor – Environmental Investigations". Contaminants and depth to groundwater is provided for the Contractor's information and may be influenced by factors such as seasonal groundwater table changes, tidal changes, drought or flooding conditions, local withdrawals from the aquifer, local construction, etc. Additional information with regard to soil descriptions and groundwater observations may also be available if geotechnical investigations were conducted for the project. The Contractor shall contain contaminated groundwater and 1) treat it on-site prior to discharge to sanitary sewer; 2) treat it on-site prior to discharge to surface water; or 3) transport water to an off-site treatment/disposal facility.

This Item does not apply to the possible diversion of existing storm water flow around the construction site during Project activities. Diversion of existing storm water or surface flows shall be completed in accordance with the Contract and all applicable permits. This item also does not include process water or wastewater generated by the Contractor's work activities.

Construction Methods:

A. General

It is the Contractor's responsibility to determine the expected groundwater generation rate from construction activities, select the appropriate groundwater management method, and size its system capacity to meet those dewatering needs.

All equipment required as a part of this Item shall be installed in a location and manner acceptable to the Engineer and in accordance with the manufacturer's recommendations. Equipment shall be decontaminated prior to arrival at the Project, decontaminated prior to being moved to another area of the project, and then decontaminated before it leaves the Project, at no additional cost to the State. Solids (soil or sediment) generated by on-site dewatering activities shall be brought to the Waste Stockpile Area (WSA) for testing and characterization by the Engineer.

The Contractor is responsible for operating and maintaining the equipment at all times when dewatering in the GW-AOEC occurs. This includes providing appropriate supervision during evenings, weekends, and holidays. If the system is intended to operate unattended, a remote alarm system acceptable to the Engineer shall be installed to monitor critical system operating parameters and the Contractor shall be responsible for providing rapid emergency response during non-working hours in the event a system malfunction occurs. A list of names and phone numbers shall be displayed in the immediate vicinity of the system for emergency contacts.

The Contractor shall report releases from the groundwater treatment system due to overfilling or equipment/piping failure to the DEEP Spill Response Unit in accordance with RCSA 22a-450 and provide the Engineer with all information, including the DEEP case number. All costs related to spill response associated with the Contractor's on-site containment or treatment system will be the responsibility of the Contractor.

The Contractor shall collect all samples related to permit compliance in the presence of the Engineer. The Contractor shall provide informational copies of all groundwater analytical results and discharge monitoring reports to the Engineer as they are generated.

The Contractor shall operate the dewatering equipment at a rate that removes the groundwater that naturally infiltrates the excavation. The Contractor shall not cause a hydraulic gradient that draws groundwater into the excavation at an excessive rate. Additional treatment required due to the mobilization of off-site contaminants caused by the Contractor dewatering at an excessive rate will be the responsibility of the Contractor.

Additional treatment related to the Contractor's work activities (i.e. treatment or increased charges due to changes in pH or introduction of different contaminants into the groundwater) and management and disposal of excess water related to the Contractor's process water or waste water will not be included under this item but will be considered a part of the Contractor's cost for the item under which the work is being performed.

B. Groundwater Management Methods

The Contractor shall use one or more of the following methods for the management and disposal of contaminated groundwater. Based on project specifics and site constraints, the Contractor may choose to use more than one of the following methods on a single project. All methods may not be possible at the site due to sanitary sewer or permitting restrictions.

1. On-Site Treatment System with Discharge to Sanitary Sewer

a. Contractor Submittals

At least 14 days prior to <u>any</u> submittal to the Publicly Owned Treatment Works (POTW) or DEEP, the Contractor shall submit the treatment system design, which has been sealed by a Professional Engineer licensed in the State of Connecticut to the Engineer for review and comment. Equipment shall prevent sediments and solids, as well as contaminants in excess of the permit allowable effluent concentrations, from entering the sanitary sewer. This submittal shall include a schematic or diagram that shows all treatment system equipment, well point locations, pump set-ups in excavations, sedimentation control methods, system location, method of conveyance, flow rates, pipe sizes, valve locations, sampling ports, discharge locations, electrical power connection, etc.

The Contractor shall submit the manufacturer's data sheets, assembly details and performance data on all treatment equipment. If dewatering equipment is to remain on site between October 15 and April 15, the Contractor shall include its method to prevent the treatment system equipment from freezing (heat tape, immersion heaters, etc.).

The Contractor shall detail its method to collect and contain water in its excavations. The Contractor shall also describe in detail its methods for limiting the quantity of water entering the excavation, including shoring, location of well points, limiting excavation size, preventing entry of surface water into the excavation, etc. The Contractor shall also include its assumptions and flow rate calculations related to the sizing of the system.

It is the Contractor's responsibility to design and properly size the system to accommodate the anticipated contaminants and dewatering rates based on its construction activities, POTW limitations, and permit requirements. The Contractor is alerted that construction activities may be limited based on permit restrictions or POTW limitations.

No claim for delay or request for additional time will be considered based upon the Contractor's failure to accommodate the review process.

b. Permits

Groundwater generated by construction activities within a GW-AOEC shall be appropriately treated and discharged to the sanitary sewer system within Project limits. Management and discharge of contaminated groundwater shall be accomplished in accordance with a DEEP General Permit and POTW requirements. The Contractor shall be responsible for registering under the General Permit, any other necessary State or local permits, and all associated fees.

The DEEP General Permit for the Discharge of Groundwater Remediation Wastewater to Sanitary Sewer is available at <u>www.ct.gov/dep</u>. The Contractor shall submit the most current permit registration form to the DEP. A minimum lead-time of six (6) weeks can be expected to process and submit the registration, in addition to coordination time with the POTW. **No claim for delay or request for additional time will be considered based upon the Contractor's failure to accommodate the permitting process.** The Contractor <u>shall not</u> submit the permit registration to the DEEP prior to the Engineer's review of and comment on the treatment system.

The Contractor shall submit a copy of the DEEP permit application and permit number to the Engineer prior to initiating any discharge.

All testing required by the general permit shall be conducted by a laboratory certified by the Connecticut Department of Public Health (DPH) for the method specified in the permit. The Contractor shall submit copies of the analytical results to the all parties specified in the permit terms and conditions and to the Engineer.

No claim for delay or request for additional time will be considered based upon the Contractor's failure to design a system to meet this performance specification. It is the Contractor's responsibility to properly size the treatment system and temporary containment tanks based on its anticipated flow rates from construction activities and to determine the level of treatment required to meet permit discharge limits.

c. Treatment System Operation

The Contractor shall ensure that all personnel involved in the groundwater treatment operations understand the terms of the General Permit. In the event of a conflict between the requirements of the Contract and the permit, the more stringent will apply.

The Contractor shall not commence work activities within any GW-AOEC until such time as:

i. the temporary groundwater treatment system design is reviewed by the Engineer and comments are adequately addressed,
ii. the system is installed in accordance with the accepted design and is completely operational, and
iii. a copy of the Contractor's permit application and permit number has been submitted to the Engineer.

The Contractor shall make any sanitary sewer tie-in modifications necessary to accommodate the treatment unit only after obtaining approval from the Engineer and the POTW.

The Contractor shall take all meter readings required by the permit and forward them to the appropriate parties.

The Contractor shall collect all samples related to permit compliance in the presence of the Engineer and shall submit copies of the analytical results and discharge monitoring reports to the appropriate agency(ies) as required by the General Permit terms and conditions. The Contractor shall provide informational copies of all analytical results and discharge monitoring reports to the Engineer as they are generated. In the event of an exceedance, the Contractor shall immediately comply with the "***Duty to Correct, Record, and Report Violations***" section of the General Permit. The Contractor shall provide the Engineer a copy of the required DEEP reporting and then document its review of the treatment system and all actions taken to correct the exceedance in writing to the Engineer within 48 hours of receiving laboratory data documenting the exceedance.

If the discharge must be suspended due to an effluent violation, the Contractor shall only restart the discharge after obtaining all necessary approvals from the DEEP/POTW and in full compliance with the General Permit and any amendments imposed thereto.

No claim for delay, request for additional time, or request for additional design/redesign costs for the system will be considered based upon the Contractor's failure to design/redesign a system to meet this performance specification

2. On-Site Treatment System with Discharge to Surface Water

a. Contractor Submittals

At least 14 days prior to <u>any</u> submittal to the DEEP, the Contractor shall submit the treatment system design, which has been sealed by a Professional Engineer licensed in the State of Connecticut, to the Engineer for review and comment. Equipment shall prevent sediments and solids, as well as contaminants in excess of the permit allowable effluent concentrations, from discharging. This submittal shall include a schematic or diagram that shows all treatment system equipment, well point locations, pump set-ups in excavations, sedimentation control methods, system location, method of conveyance, flow rates, pipe sizes, valve locations, sampling ports, discharge locations, electrical power connection, etc.

The Contractor shall submit the manufacturer's data sheets, assembly details and performance data on all treatment equipment. If dewatering equipment is to remain on site between October 15 and April 15, the Contractor shall include its method to prevent the treatment system equipment from freezing (heat tape, immersion heaters, etc.).

The Contractor shall detail its method to collect and contain water in its excavations. The Contractor shall also describe in detail its methods for limiting the quantity of water entering the excavation, including shoring, location of well points, limiting excavation size, preventing entry of surface water into the excavation, etc. The Contractor shall also include its assumptions and flow rate calculations related to the sizing of the system.

It is the Contractor's responsibility to design and properly size the system to accommodate the anticipated contaminants and dewatering rates based on its construction activities and permit requirements. The Contractor is alerted that construction activities may be limited based on permit restrictions.

No claim for delay or request for additional time will be considered based upon the Contractor's failure to accommodate the review process.

b. Permits

Groundwater generated by construction activities within a GW-AOEC shall be appropriately treated and discharged to surface water within Project limits. Management and discharge of contaminated groundwater shall be accomplished in accordance with a DEEP General Permit. The Contractor shall be responsible for registering under the General Permit and all associated fees.

The DEEP General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water is available at www.ct.gov/dep. The Contractor shall submit the most current permit registration form to the DEEP. A minimum lead-time of six (6) weeks can be expected to process and submit the registration. **No claim for delay or request for additional time will be considered based upon the Contractor's failure to accommodate the permitting process.** The Contractor shall not submit the permit registration to the DEEP prior to review of and comment on the treatment system by the Engineer.

The Contractor shall submit a copy of the DEEP permit application and permit number to the Engineer prior to initiating any discharge.

All testing required by the General Permit shall be conducted by a laboratory certified by the Connecticut Department of Public Health (DPH) for the method specified in the permit. The Contractor shall submit copies of the analytical results to the all parties specified in the permit terms and conditions and to the Engineer.

No claim for delay or request for additional time will be considered based upon the Contractor's failure to design a system to meet this performance specification. It is the Contractor's responsibility to properly size the treatment system and temporary containment tanks based on its anticipated flow rates from construction activities and to determine the level of treatment required to meet permit discharge limits.

For sites where the receiving water body does not qualify the site for registration under the DEEP General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water and the discharge is anticipated to continue for 30 days or less, the Contractor may qualify for a DEEP Temporary Authorization (TA) to discharge to surface water. The Contractor will be bound to the terms and conditions of the TA the same as if it were a permit. If the Contractor applies for, and receives, a TA from the DEEP, all other requirements of this specification will apply, except that where the specification refers to a permit, the TA will be substituted.

c. Treatment System Operation

The Contractor shall ensure that all personnel involved in the groundwater treatment operations understand the terms of the General Permit. In the event of a conflict between the requirements of this Item and the permit, the more stringent will apply.

The Contractor shall not commence work activities within any GW-AOEC until such time as:

i. the temporary groundwater treatment system design is reviewed by the Engineer and comments are adequately addressed,

ii. the system is installed in accordance with the accepted design and is completely operational, and

iii. a copy of the Contractor's permit application and permit number has been submitted to the Engineer.

The Contractor shall take all meter readings required by the permit and forward them to the appropriate parties.

The Contractor shall collect all samples related to permit compliance in the presence of the Engineer and shall submit copies of the analytical results and discharge monitoring reports to the appropriate agency(ies) as required by the General Permit terms and conditions. The Contractor shall provide informational copies of all analytical results and discharge monitoring reports to the Engineer as they are generated. In the event of an exceedance, the Contractor shall immediately comply with the "***Duty to Correct, Record, and Report Violations***" section of the General Permit. The Contractor shall provide the Engineer a copy of the required DEEP reporting and then document its review of the treatment system and all actions taken to correct the exceedance in writing to the Engineer within 48 hours of receiving laboratory data documenting the exceedance.

If the discharge must be suspended due to an effluent violation, the Contractor shall only restart the discharge after obtaining all necessary approvals from the DEEP and in full compliance with the General Permit and any amendments imposed thereto.

No claim for delay, request for additional time, or request for additional design/redesign costs for the system will be considered based upon the Contractor's failure to design/redesign a system to meet this performance specification.

3. Off-Site Treatment and Disposal

At least 14 days prior to <u>any</u> work involving the dewatering of contaminated groundwater, the Contractor shall submit for the Engineer's review and comment its proposed system to collect and contain the contaminated groundwater. This submittal shall include schematics of proposed pump set-ups in excavations; sedimentation control measures; probable location of temporary containment tanks; schematics of proposed method to transfer liquids from temporary containment tanks to transport vehicles;

schematic of proposed method to off-load liquids at the off-site permitted treatment/disposal facility; documentation that transport vehicles hold a “Waste Transportation Permit” for contaminated liquids per CGS 22a-454; and the name of the disposal facility from the following list of Department-approved and DEP-permitted treatment facilities for State-regulated liquid disposal:

Clean Harbors of CT 51 Broderick Rd. Bristol, CT 06010 (860) 583-8917	Tradebe Environmental Services, LLC 47 Gracey Ave. Meriden, CT 06451 (203) 238-6745

Bridgeport United Recycling
50 Cross St. Bridgeport, CT 06610
(203) 276-0887

All testing required to meet facility acceptance parameters shall be conducted by the Contractor in the presence of the Engineer. The Contractor is hereby notified that laboratory turnaround time is expected to be fifteen (15) working days. The Contractor shall provide informational copies of the laboratory results to the Engineer. **No delay claim will be considered based upon the Contractor’s failure to accommodate the laboratory turnaround time as identified above or to design its system with sufficient holding capacity to accommodate this requirement.**

The Contractor shall obtain and complete all paperwork necessary to arrange for disposal of the contaminated groundwater (such as disposal facility waste profile sheets). It is solely the Contractor’s responsibility to coordinate the disposal with its selected facility. Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and disposal in accordance with all Federal and State regulations. **No claim will be considered based on the failure of the Contractor’s selected disposal facility(s) to meet the Contractor’s production rate or for the Contractor’s failure to select sufficient facilities to meet its production rate.**

The Contractor will be responsible for disposal of the entire shipment as the Hazardous Waste Generator for water that undergoes a change in waste classification due to the Contractor’s work activities or processes (i.e. contaminated groundwater being classified characteristically hazardous for pH due to grouting operations).

Method of Measurement:

Within fourteen (14) calendar days after addressing the Engineer’s comments on the proposed system(s) for Handling Contaminated Groundwater, the Contractor shall submit to the Engineer for approval a cost breakdown of its lump sum bid price. The submission must include substantiation showing that the cost breakdown submitted is reasonable based on the Contractor's lump sum bid. The cost breakdown shall be in accordance with the following payment schedule:

a. The cost to prepare the design for proposed system(s) for Handling Contaminated Groundwater, including preparation and submittal of all permit registration applications, in accordance with these specifications. Design costs shall not exceed 10% of the total cost of the item.

b. The procurement and installation cost for the proposed system(s) for Handling Contaminated Groundwater in accordance with these specifications. Procurement and installation costs shall not exceed 20% of the total cost of the item.

c. Equipment decontamination and demobilization and restoration of site. Decontamination and demobilization costs shall not exceed 10% of the total cost of the item.

d. The remaining costs for operation, monitoring, permit compliance, sampling and analysis, disposal costs, and maintenance of the proposed system(s), including cleaning of the temporary containment tanks of settled solids, transporting of solids to the WSA, and transportation of the contaminated dewatering wastewater to an off-site permitted treatment/disposal facility in accordance with these specifications shall be divided evenly throughout the duration of the project work involving contaminated groundwater at the discretion of the Engineer.

Increased costs directly related to the Contractor's operation (i.e. treatment or increased charges due to changes in pH or additional contaminants, treatment and disposal of excess water related to process or waste water, etc.) will not be paid under this item but will be considered a part of the Contractor's cost for the item under which the work is being performed.

Basis of Payment:

This work will be paid for at the Contract lump sum price for "Handling Contaminated Groundwater" which price shall include: all work and materials involved with handling contaminated groundwater from within GW-AOEC and shall include all equipment, materials, tools and labor incidental to removal of the contaminated groundwater from the excavation; conveying contaminated groundwater from the dewatering point to the temporary containment tanks and groundwater treatment facility; treatment; conveying discharge of contaminated wastewater to a sanitary sewer, surface water or off-site disposal at a permitted treatment/disposal facility (including transportation); disposal or recycling of used treatment media (i.e. bag filters and spent carbon); permit applications; disposal and permit fees; POTW fees; electrical costs; sampling and documentation costs; laboratory costs; design and monitoring; mobilization, operation, and maintenance of the system; site work; all required equipment decontamination; transportation of solids to the WSA; and equipment demobilization. Sedimentation control associated with work under this Item will be paid under the appropriate items of the Contract.

Pay Item	Pay Unit
Handling Contaminated Groundwater	L.S.