GEC Project No. 1676-519C

PERMANENT SOLUTION STATEMENTS
FOR
LOTS 37 AND 42
5 PACELLA PARK DRIVE
RANDOLPH, MASSACHUSETTS

MassDEP RTNs 4-3023897 and 4-25464

December 14, 2017

Prepared for:
Great Pond Residential LLC
c/o The Dolben Company, Inc.
150 Presidential Way, Suite 220
Woburn, Massachusetts 01801

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781)356-9140 Fax: (781)356-9147
info@goldmanenvironmental.com

TABLE OF CONTENTS

SECTION **PAGE**

1.0 INTRODUCTION 1

2.0 SITE BACKGROUND AND HISTORY 3

2.1 Subject Property Location and Disposal Site Boundaries 3

2.2 Owner / Operator and Operations History 6

2.3 Description of the Release and Response Actions 9

3.0 RISK CHARACTERIZATION 27

3.1 Pre-Remedial Risk Characterization Findings 28

3.2 Post-Remedial Risk Characterization Findings 34

4.0 UPDATED CONCEPTUAL SITE MODEL 39

5.0 REPRESENTATIVENESS EVALUATION AND DATA USABILITY ASSESSMENT 47

5.1 Representative Evaluation 48

5.2 Data Usability Assessment 56

5.3 Conclusions 59

6.0 PERMANENT SOLUTION STATEMENT 59

6.1 Permanent Solution with Conditions for RTN 4-3023897 59

6.2 Permanent Solution with Conditions for RTN 4-25464 64

6.3 Public Involvement Activities 67

7.0 WARRANTY 68

TABLE OF CONTENTS
(Continued)

FIGURES

Figure 1:	Site Locus Map
Figure 2:	MassDEP Site Assessment Map
Figure 3A:	Site Plan showing Property and Disposal Site Boundaries
Figure 3B:	Site Plan showing Limits of Wetland Protection Areas, Watershed, Wetland Protection Districts, and Riverbank Areas
Figure 3C:	Site Plan showing Permanent Locations and Elevations of Soil Repositories
Figure 3D:	Site Plan showing Final Stormwater Drainage System, Constructed Wetland and Rain Gardens
Figure 3E:	Constructed Wetland Planting Plan
Figure 4A:	Site Plan showing Pre-construction Exposure Points
Figure 4B:	Site Plan showing Pre-excavation RGP Locations (RGP-1 to RGP-13, RGP-345 and RGP-3456)
Figure 4C:	Site Plan showing Final Status of Site-wide Soil Excavation
Figure 4D:	Site Plan showing Final Status of Remedial Area Excavations (Lot 37 EP1, Lot 42 EP1A, Lot 42 EP 2B, Lot 42 EP3A, Lot 42 EP3C, RGP-1, RGP-2, RGP-3, RGP-4, RGP-345, RGP-6, RGP-3456, RGP-7, RGP-8, RGP-9, RGP-10 and RGP-12)

TABLES

The final analytical summary tables for RTNs 4-3023897 and 4-25464 are provided in the *RAM Status Report No. 3 and RAM Completion Report in support of Construction Activities*

APPENDICES

Appendix A:	Allen & Major Associates, Inc. Drawing
Appendix B:	Historic Atlases showing Vicinity of North Station, Boston
Appendix C:	Data Validation Tables
Appendix D:	Best Management Practices for Non-Commercial Gardening at Disposal Sites
Appendix E:	Public Notification Letters
Appendix F:	Agent Authorization Letter

1.0 INTRODUCTION

Goldman Environmental Consultants, Inc. (GEC) on behalf of Great Pond Residential LLC, c/o The Dolben Company, Inc., of Woburn, Massachusetts, the property owner, submits the following Permanent Solution with Conditions for the releases of oil or hazardous materials (OHM) to soil at 5 Pacella Park Drive in Randolph, Massachusetts. The 5 Pacella Park Drive property is comprised of three lots: Lots 37, 42 and 44. The location of the Site is depicted on Figure 1, the Site Locus.

The subject property is located at the northeast corner of the Town of Randolph. It abuts the Blue Hill River, which separates the Town of Randolph from the City of Quincy to the north; and it also abuts protected open space of the Town of Braintree to the east. The Blue Hill River is a tributary to a public water supply, i.e., the Great Pond Reservoir, which services the Towns of Braintree, Randolph and Holbrook. The Zone A to the Blue Hill River is located within the north side of the subject property. The Great Pond Reservoir is located approximately 1,000 feet east of the eastern property boundary. Wetlands bordering the Blue Hill River are located along the north edge of the subject property. Refer to Figure 2, the Massachusetts Department of Environmental Protection's (MassDEP) Site Assessment Map, for the locations of the Blue Hill River, Zone A, wetlands and Great Pond Reservoir relative to the subject property.

Prior to 1978, Lots 37 and 42 were used to place bedrock debris from the development of Great Pond Commerce Park, and demolition debris and urban soils from the construction of the Orange Line (part of the MBTA's subway system) and a Roxbury mill. The OHM present in most of these soils are consistent with Anthropogenic Background concentrations. However, there were pockets of soil contamination consisting mostly of lead in a portion of Lot 37, and lead, coal tar and polychlorinated biphenyls (PCBs) in portions of Lot 42. Discrete pockets of soil contamination that appears to be related to burned wood, where a petroleum-based accelerant was used, were located on Lots 37 and 42. Lot 37 is the location of OHM contamination assigned RTN 4-3023897 (mostly related to lead contamination) and RTN 4-25906 (related to burned wood, where a petroleum accelerant was used). Lot 42 is the location of OHM contamination assigned RTN 4-25464 (mostly related to lead, coal tar and PCBs). On April 26, 2017, RTN 4-25906 was linked to RTN 4-3023897 because both RTNs are located on Lot 37. RTNs 4-3023897 and 4-25464 are not linked together. All of the releases occurred well before Great Pond Residential LLC or the Dolben Company purchased the property.

The original risk assessment provided a pathway to meet this goal. In addition, the soil management process performed for the site, included extensive daily oversight of all excavation, required detailed chemical analysis of soils in predetermined exposure points and further risk characterization of any new soil contamination found during the mass excavation. This process

required re-analysis of the risk assessment benchmark to ensure that a Notice of Activity and Use Limitation (AUL) was not required for either RTN 4-3023897 (Lot 37) or RTN 4-25464 (Lot 42).

The *Phase I Initial Site Investigation, Conceptual Phase II Scope of Work and Tier Classification Submittal* (Phase I Report) for RTNs 4-3023897 and 4-25464, combined, were submitted to MassDEP on July 29, 2015. Both release tracking numbers were classified as Tier II Sites. The Phase I Report documented the extensive amount of investigation conducted on both Lots 37 and 42. Because of the planned development of a residential apartment complex at the 5 Pacella Park Drive property, a Method 3 Risk Characterization was included in the Phase I Report. The results of the Risk Characterization were used to design a remedial strategy to allow for the future residential use of the property by Great Pond Residential LLC.

A residential apartment complex consisting of five apartment buildings, a swimming pool, club house and paved parking areas were planned for the 5 Pacella Park Drive property. Two Release Abatement Measure (RAM) Plans were submitted to MassDEP to remediate the contamination and to support construction activities associated with planned development of the property. The first RAM Plan supported remedial activities (Remedial RAM Plan or Remedial RAM) including onsite treatment of lead contaminated soil near a sensitive resource area and was submitted on July 29, 2015. The second RAM Plan supported construction activities (Construction RAM Plan or Construction RAM) and was submitted on October 9, 2015. Besides directly supporting construction activities, it also provided the following purposes: (1) excavation of discrete areas of contamination for placement in on-Site soil repositories; (2) placement of lead-contaminated soils in on-Site soil repositories; (3) continuous inspection of on-Site soils under the direction of a Licensed Site Professional to identify other pockets of contaminated soils; (4) the creation of sedimentation basin / wetland and storm trap systems to impede the infiltration of storm water through the fill; (5) placement of pavement and building foundations over most of the fill to reduce potential for erosion of soils associated with the fill into abutting wetlands; and (6) placement of pavement and/or building foundation over each of the soil repositories to minimize the potential for change of grade in the future and the potential for future human contact to the soils in the repositories. Both RAM Plans were modified from time to time as necessary. Refer to Section 2.3, below, for additional information on the RAM activities. The Remediation RAM Completion Report was submitted on September 19, 2017, and the Construction RAM Completion Report was submitted on December 11, 2017.

Subsequent to completion of the Remedial and Construction RAMs, Site conditions for the entirety of both RTN 4-3023897 (Lot 37) and 4-25464 (Lot 42) meet the requirements for a Permanent Solution with Conditions. The Conditions attached to both Permanent Solutions include the following: (1) background conditions for some hazardous materials are consistent with Anthropogenic

Background from fill placed on-Site prior to 1983; and (2) gardening of edible produce is assumed controlled by Best Management Practices. No Notice of Activity and Use Limitation is required to maintain a condition of No Significant Risk of harm for either release tracking number. Provided herein are the Permanent Solution Statements for RTN 4-3023897 and 4-25464, which are prepared in accordance with 310 CMR 40.1000.

2.0 SITE BACKGROUND AND HISTORY

A detailed description of the Site conditions and surrounding receptors can be found in the Phase I Report for RTNs 4-3023897 and 4-25464. Pertinent information obtained from the report is provided below.

2.1 Subject Property Location and Disposal Site Boundaries

The subject property is located at the north end of Pacella Park Drive, within the Great Pond Commerce Center in Randolph, Norfolk County, Massachusetts, at latitude 42.20580 N and longitude 71.05128 W. The Site Locus is provided as Figure 1. The MassDEP's Site Assessment Map, showing 500-foot and ½-mile radii, is provided as Figure 2. The subject property is comprised of three lots identified as: (1) Lot 37 (4.47 acres) on Norfolk County Land Court Plan Number 34183Q; (2) Lot 42 (8.9 acres) on Norfolk County Land Court Plan Number 34183T; and (3) Lot 44 (0.959 acres) is identified on Norfolk County Land Court Plan Number 34183U. Combined, Lots 37, 42 and 44 are approximately 13.97 acres. Appendix A contains an Existing Conditions drawing, prepared by Allen & Major Associates, Inc., stamped by Kevin J. Kiernan, a professional land surveyor, which was prepared based on these registered plans to support construction permitting. Refer to Appendix A for copies of these registered plans.

The Site Plan is provided as Figure 3A, and depicts disposal Site boundaries for RTN 4-3023897 and 4-25464 and property boundaries for Lots 37 and 42. For both Lots 37 and 42 the property includes both upland filled land, a steep embankment, and wetlands extending from the bottom of the embankment to the Blue Hill River. The disposal sites for Lot 37 (RTN 4-3023897) and Lot 42 (RTN 4-25464) are wholly located on the upland filled land and includes the embankment. RTN 4-3023897 and RTN 4-25464 encompass 3.2 and 7.2 acres, respectively. The disposal sites exclude the original wetland areas, as depicted on Figure 3A.

The development of the subject property with five residential apartment buildings, a club house, a swimming pool and paved parking areas is nearing completion. Leasing of the apartment units has begun, and residents are residing on the completed portions of the property. Office and maintenance workers for the apartment complex are located on the property. Construction workers are

present on the property during Site development. Utility lines exist on the property. Therefore, utility workers could be present now during repair or maintenance work, and could be present in the future. Land use in the vicinity of the Site is commercial and residential. The closest residential properties abut Lot 42 on the west side. The subject property is located in the northeast corner of the Town of Randolph and abuts the City of Quincy and the Town of Braintree. Within portions of both municipalities within one-half mile of the subject property are located wetlands, open spaces and surface water features. No residents of Quincy or Braintree are located within one-half mile of the subject property.

The nearest child's school is the May Center School, at 41 Pacella Park Drive, located between 700 and 1,000 feet south of the subject property. This school is operated by the May Institute and services children and young adults, aged 2.9 to 22 years, who have Autism Spectrum Disorder or other developmental disabilities. They provide full-day education and vocational services. No child's school, child's day care center or institution, as defined at 310 CMR 40.0006, is located within 500 feet of the subject property.

The property and surrounding areas are serviced by the municipal potable water supply. An irrigation well was recently installed on the subject property, as part of the development of the residential apartment complex. Based on search of MassDEP's Searchwell for domestic wells in Randolph, conducted to support the Phase I Report, no private potable water supply wells are located within 500 feet of the subject property (http://public.dep.state.ma.us/searchwell/).

The Towns of Randolph and Holbrook and City of Braintree obtain their potable drinking water from the Great Pond Reservoir System, comprised of Great Pond (Source ID #'s3040002-1S, 3040000-1S, 3040001-1S), Richardi Reservoir (Source ID#3040000-2S), Farm River (Source ID #304000-3S) and Upper Reservoir-Great Pond (Source ID #304000-4S). The Great Pond Reservoir is comprised of two parts, the Lower Reservoir and the Upper Reservoir. The Towns of Randolph and Holbrook have a joint water treatment and distribution system. The City of Braintree's system is separate. According to the City of Braintree's 2013 Water Quality Report, "*Water enters the reservoirs via the Farm River which is diverted into the Richardi Reservoir. When the Upper and Lower Ponds become low, water is pumped from the Richardi to supplement our supply. Water from the Narroway Brook feeds into the Upper Reservoir and flows by gravity into the Lower Reservoir where it enters our Treatment Plant.*" The intake for the Randolph-Holbrook Treatment Plant is also in the Lower Reservoir. Based on MassDEP's "My Community" resource, the 2010 residential populations for the Towns of Randolph and Holbrook and City of Braintree are 32112, 10791 and 35744, respectively. The Lower Reservoir of the Great Pond is located approximately 1,200 feet southeast of the subject property.

The subject property is located in the Boston Harbor Drainage Area, based on Figure 15 of 314

CMR 4.06. Based on the MassDEP Phase I Site Assessment Map, provided as Figure 2, the Blue Hill River forms the northern property boundary and associated freshwater wetlands are located on the northern portion of the property between the bottom of the embankment and the Blue Hill River. Other wetlands associated with the Blue Hill River are located on the north side of the Blue Hill River. The Blue Hill River discharges to the Farm River, northeast of Great Pond, and eventually discharges to the Fore River. When needed, water may be pumped from the Farm River to the Richardi Reservoir, which is part of the water supply system serving the Towns of Randolph and Holbrook and the City of Braintree.

According to 314 CMR 4.06 Figure 15, the West Farm River (also known as the Blue Hill River) and the Farm River are Class B Surface Waters. According to Table 15 of 314 CMR 4.06, the Great Pond and tributaries thereto, the Upper Reservoir of the Great Pond and tributaries thereto, and the Richardi Reservoir and tributaries thereto are Class A Surface Waters / Public Water Supplies. Based on the MassDEP Phase I Site Assessment Map (Figure 2), a Zone A is associated with the Blue Hill River, which is inconsistent with its Class B Surface Water classification in Figure 15 of 314 CMR 4.06 but is consistent with its status as a tributary to the Richard Reservoir. The Zone A extends 200 feet from the Blue Hill River and includes a large portion of the subject property. Refer to Figures 2 and 3B for the approximate boundary of the Zone A (likely the same as the 200-foot riverfront boundary) across the Site. The closest portion of the Great Pond Reservoir's Zone A is located approximately 1,000 feet east-southeast of the subject property.

According to the National Flood Insurance Map Panel # 25021C0208E, dated July 17, 2011, a portion of the Site is located within the flood zone designation Zone A; however, no base flood elevation has been determined. The area is a large shrub swamp associated within the Blue Hill/Farm River watershed and the nearest flood level determined is elevation 120 feet above mean sea level. No portion of the subject property was altered within this area, except for the construction of a wetland located at approximate elevation of 119 feet above mean sea level. All buildings were constructed at elevations between 132.5 and 155.5 feet above mean sea level. Paved parking areas are located at elevations between approximately 131 and 155 feet above mean sea level.

Other environmental resource areas include Areas of Critical Environmental Concern (ACEC), protected open spaces, certified vernal pools and habitats of endangered species (ES), threatened species (TS) or species of special concern (SSC). An ACEC is an area which has been so designated by the Secretary of Environmental Affairs pursuant to 301 CMR 12.00. ACECs are those areas within the Commonwealth where unique clusters of natural and human resource values exist and which are worthy of a high level of concern and protection. Protected open spaces are local, state or federal protected areas, including but not limited to parks, forests and watershed lands. Protected open spaces

may also include cemeteries and green spaces associated with schools or institutions, and conservation lands held by non-profit corporations.

A vernal pool is a water body that has been certified by the Massachusetts Division of Fisheries & Wildlife as such. Vernal Pool Habitat means any confined basin depression which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of the depressions, to the extent that the habitat is within an Area Subject to Protection under the Wetlands Protection Act, as specified in 310 CMR 10.02(1).

Habitats of ES, TS or SSC are designated in the Massachusetts Natural Heritage Atlas, and are shown in the Site Scoring Map. ES are native species which are in danger of extinction throughout all or part of their range, or which are in danger of extirpation from Massachusetts, as documented by biological research and inventory. TS are native species which are likely to become endangered in the foreseeable future, or which are declining or rare as determined by biological research and inventory. SSC are native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts.

The following additional environmental resource areas are located within 0.25 miles of the Site.

Resource Area	Within 1/4 mile?	Location and Distance	Description
ACEC	No		
Protected Open Space	Yes	Abuts to the north and east	Blue Hill Reservation (Figure 2)
Vernal Pool	No*		*A Certified Vernal Pool is located approximately one-half mile north-northwest of the Site in the Blue Hill Reservation (Figure 2)
Habitat of ES, PS or SSC	Yes	1,000 feet to the north	A large Estimated Rare Wetland Wildlife Habitat is located in the Blue Hill Reservation (Figure 2)

2.2 Owner / Operator and Operations History

2.2.1 Owner / Operator History

The ownership histories for Lots 37, 42 and 44 are provided below.

Lot	Date	Grantee / Grantor	Source
37	7/20/2015	Great Pond Residential LLC (Gtee) Equity Industrial Randolph IV, LLC (Gtor)	Norfolk County Land Court Certificate # 191333
37	6/25/2004	Equity Industrial Randolph IV, LLC (Gtee); Third Dunkin Donuts Realty, Inc. (Gtor)	Norfolk County Land Court Certificate # 167962
37	3/15/1984	Dunkin Donuts of Mass. Inc. (Gtee); Pacella Bros., Inc. (Gtor)	Norfolk County Land Court Certificate # 118173

Lot	Date	Grantee / Grantor	Source
42	7/20/2015	Great Pond Residential LLC (Gtee) Equity Industrial Randolph IV, LLC (Gtor)	Norfolk County Land Court Certificate # 191333
42	6/25/2004	Equity Industrial Randolph III, LLC (Gtee); Dunkin' Ventures Corporation (Gtor)	Norfolk County Land Court Certificate # 167963
42	5/27/1993	Dunkin' Ventures Corporation (Gtee); Property Asset Management Inc. (Gtor)	Norfolk County Land Court Certificate # 139668
42	4/20/1993	Property Asset Management Inc. (Gtee); RI Hillcroft Inc. (Gtor)	Norfolk County Land Court Certificate # 139363
42	10/5/1992	RI Hillcroft Inc. (Gtee); Claremont Randolph Land Limited Partnership (Gtor)	Norfolk County Land Court Certificate # 138038
42	5/4/1988	Claremont Randolph Land Limited Partnership (Gtee); Great Pond Corporation (Gtor)	Norfolk County Land Court Certificate # 128537
42	11/27/1985	Great Pond Corporation (Gtee); Pacella Bros. Inc. (Gtor)	Norfolk County Land Court Certificate # 122438

Lot	Date	Grantee / Grantor	Source
44	7/20/2015	Great Pond Residential LLC (Gtee) Equity Industrial Randolph IV, LLC (Gtor)	Norfolk County Land Court Certificate # 191333
44	8/1/2013	Equity Industrial Randolph IV, LLC (Gtee); Equity Industrial Randolph II, LLC (Gtor)	Norfolk County Land Court Certificate # 187182
44	6/25/2004	Equity Industrial Randolph II, LLC (Gtee); Third Dunkin Donuts Realty Inc. (Gtor)	Norfolk County Land Court Certificate # 167960 (Lot 44 was part of larger parcel)
44	5/16/1979 or 6/17/1976	Dunkin Donuts of Mass. Inc. (Gtee); Pacella Corp. (Gtor)	Norfolk County Land Court Certificate # 108809 or 102087 (Lot 44 was part of a larger parcel)

Until Great Pond Residential LLC purchased this property and constructed a residential apartment complex, this property was undeveloped and there were no operator or operations history (other than filling of the land during the 1970s). The development of the residential apartment complex is nearing completion, and residents will soon occupy the property. Prior to the Pacella Bros. Inc.'s ownership of the property, Lots 37 and 42 were not filled lands. The history of fill activities are described in Section 2.2.2, below.

2.2.2 Operations History

Lot 42 is the western parcel of the subject property, and Lot 37 is the east parcel. Lot 44 is located south of Lot 37 and contains little to no fill. The history of filling operations at the Site was determined by reviewing Town of Randolph written records, site assessment work done by others and historic aerial photographs of the Site vicinity. These documents are included in Appendix A of the Phase I Report. Review of these documents indicates that the filling operation on-Site progressed in two phases.

Filling work began in the early 1970's, initially with Lot 37. Based on a 1971 aerial photograph, filling had commenced on Lot 37, which is located east of the end of Pacella Park Drive. At that time, no filling had occurred on the west side of the end of the roadway (i.e., Lot 42). The fill placed on the east side is likely to have been from the teardown of an old mill in Roxbury, Massachusetts as described in several site assessment reports done previously on the parcel for due diligence purposes. Test pitting done in December 2011 and August 2014 by GEC and Miller Engineering & Testing Inc. (Miller) support this determination. Much of the interior of Lot 37 was found to have large granite architectural pieces, granite curbing and other building materials.

Subsequently, the fill that was placed consisted of construction demolition debris that originated from the tear down of the elevated Orange Line subway in Boston. Previous due diligence reports have stated that the location of the tear down was the Dorchester segment of the elevated subway line. GEC reviewed historical information provided by the MBTA from a web site on the New York City subway, www.nycsubway.org, and determined that the elevated Orange Line work likely was from the North Station segment of the Orange and Green Line subway. The reasons for this determination are that the Dorchester/southern elevated Orange Line subway was not taken down until after 1987 (at which time filling operations at the subject Site were complete) while the northern segment was begun in 1975.

GEC test pits done within Lot 42 indicated the presence of construction demolition debris consistent with the elevated railway materials. They also were consistent with the electrical nature of the subway system. The debris included large concrete columns with electrical conduit embedded

within them, likely light fixtures that illuminated the elevated stations, railroads ties and creosote, pieces of third rail and metal electrical boxes, for example.

There are enforcement records from the Town of Randolph Conservation Commission beginning in the early 1970's and into 1978 that include cease and desist orders for filling wetlands without a permit. The resulting actions include the landowner at that time obtaining an Order of Conditions issued January 28, 1976 for a wetlands permit allowing the work and certain remediation activities to occur. The record also indicates that the work was essentially completed by November 1978 based on a letter to the Commission from Charles Gale, P.E. There is an aerial photograph taken on April 23, 1978, which clearly shows extensive filling across Lot 42.

Based on Town of Randolph records, work at the Site subsequent to 1978 was done at the behest of the Conservation Commission to keep further filling operations from occurring (i.e., install rip rap wall) and to stabilize Site conditions. Based on the foregoing, filling operations across the Site began during or before 1971 with the filling of Lot 37 and moved westward to Lot 42. Filling operations appear to be completed on or before 1978.

2.3 Description of Release and Response Actions

During January 2004, Roberts Consulting Inc. conducted due diligence field investigations on Lot 37 on behalf of a prospective buyer, and discovered the presence of lead, polycyclic aromatic hydrocarbons (PAHs) and petroleum at levels that exceeded reportable concentrations. Investigations conducted during March 2004 by Vanesse Hangen Brustlin, Inc. (VHB), on behalf of Third Dunkin Donuts Realty, Inc., the owner at that time, confirmed that OHM was present in the soils at levels exceeding applicable reportable concentrations. On May 21, 2004, Third Dunkin Donuts Realty, Inc. notified MassDEP of a 120-day reportable condition at Lot 37. The following OHM were identified as being present in soils at levels exceeding RCS-1 Reportable Concentrations: lead; C11-C22 aromatic hydrocarbons; naphthalene; phenanthrene; benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; dibenzo(a,h)anthracene; and indeno(1,2,3-c,d)pyrene. On June 9, 2004, MassDEP issued a Notice of Responsibility (NOR) to Third Dunkin Donuts Realty, Inc. and assigned RTN 3-23897 to this condition. The release was later re-assigned RTN 4-3023897 when Randolph was transferred from the Northeast Regional Office of MassDEP to the Southeast Regional Office.

On June 9, 2004, a Notice of AUL was recorded at the Norfolk County Land Court as Document no. 1,028,807. The Notice of AUL applied to a portion of Lot 37. The Notice of AUL had the following limitations for future land use within the AUL area: (1) no residential, day care or school use; (2) no playground, playing field or similar use; and (3) no cultivation of fruits or vegetables. The

AUL applied to the northeast portion of Lot 37. A Class B-2 Response Action Outcome (RAO) Statement, prepared by VHB, was submitted to MassDEP on June 23, 2004.

On April 22, 2011, MassDEP issued a Notice of Audit Finding / Notice of Non-compliance (NON-SE-11-3A-034) to Third Dunkin Donuts Realty, Inc. This Notice reported MassDEP's findings regarding a Level 1 Technical Screening Audit of the RAO, a Level 1 Technical Screening Audit of the AUL, and a Level 2 Field Inspection Audit of Lot 37. No issues were identified as a result of the Level 1 Technical Screening Audit of the RAO or the Level 2 Field Inspection Audit. The Notice identified four violations for the Notice of AUL: (1) the requirements specified in the LSP Opinion differed from those in the Notice of AUL; (2) no required registry copy of the survey plan was provided to MassDEP; (3) copies of the public notifications to town agencies were not provided to MassDEP; and (4) copy of the published public notice was not provided to MassDEP. MassDEP provided two options: (1) record an AUL Amendment; or (2) terminate the AUL and submit a RAO that does not rely on an AUL.

Equity Industrial Randolph IV (Equity) entered into an Administrative Consent Order (ACO) (ACO-SE-12-3A-008) with MassDEP on June 22, 2012, which was subsequently revised via amendment on several occasions. The ACO also required either the termination or amendment of the AUL.

During the due diligence investigations conducted between 2011 to 2014, elevated levels of lead in soils were found to be present at Lot 37 outside the AUL area. This situation indicated that the AUL boundaries were not adequate. Because the planned residential use of the property is inconsistent with the terms of the AUL, a decision was made that the Notice of AUL and Class B-2 RAO should be terminated. GEC conducted a Method 3 Risk Characterization (Section 8 of Appendix A of the Phase I Report) to determine where and what remedial actions need to be done to make the property suitable for residential redevelopment.

On October 8, 2014, Dolben and GEC met with Equity and its consultant, Roberts, to discuss the findings of the due diligence investigations. Equity was notified that the distribution of lead on Lot 37 was not consistent with the existing Notice of AUL. On December 23, 2014, Equity Industrial Randolph IV terminated the Notice of AUL for Lot 37 (Norfolk County Land Court Document 1,320,499). A registry copy of the terminated AUL was submitted to MassDEP on January 12, 2015. Also on December 23, 2014, Equity Industrial Randolph IV retracted the Class B-2 RAO for RTN 4-3023897 (Lot 37). The termination of the Notice of AUL was also conducted to comply with the requirements of the ACO.

For Lot 42, information on prior response actions conducted under the 1983 MCP are provided in Appendix D of GZA GeoEnvironmental, Inc.'s (GZA) *Environmental Site Evaluation, Great Pond Center and Vacant Parcel, Randolph, Massachusetts*, dated June 1993. GZA's report is provided in Appendix B of Appendix A of the Phase I Report. The vacant parcel is Lot 42 and the Great Pond Center abuts Lot 42 to the south. Correspondences and records, prepared by the Massachusetts Department of Environmental Quality Engineering (DEQE) (later renamed MassDEP) and the U.S. Environmental Protection Agency (USEPA) and provided in the Phase I Report, discussed the discovery of a thin layer of semi-solid asphaltic material and the presence of base / neutral extractable compounds in soils of the vacant parcel. This discovery was provided to DEQE in two geotechnical reports, as documented in a DEQE correspondence, dated March 27, 1985. These base / neutral extractable compounds consisted mostly of PAHs and phthalates, and were attributed to the asphaltic / petroleum product residues found in on-Site soil. MassDEP required the installation of monitoring wells at specific locations and screened at specific depths, for analysis via specific methods. The locations of these four monitoring wells, designated G-1 to G-4, are not certain, but likely correspond to GZA's later B-1 to B-4 monitoring well designations, in which case G-1 is not located on the vacant lot but is located on the Great Pond Center (15 Pacella Park Drive). Naphthalene was detected in a groundwater sample from G-4, bis(2-ethylhexyl)phthalate was detected in groundwater samples from G-3 and G-4, and lead was detected in a groundwater sample from G-2. No other base / neutral / acid extractable compounds or volatile organic compounds (VOCs) were detected in these monitoring wells.

An internal DEQE memo, dated November 1, 1985, provided the following summary and recommendation regarding this Site (Lot 42): *A site assessment for the presence of oil and hazardous materials was performed by a private consulting firm on a vacant lot on Pacella Park Drive in Randolph. The site is located approximately .25 miles from The Great Pond, a drinking water supply. After reviewing the report, the Department required testing of the groundwater at the site. Results of the groundwater monitoring reveal insignificant contamination of groundwater migrating from the property. Based upon this data, the Region recommends no further action.*

The vacant parcel (Lot 42) was identified by the USEPA as a Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Site (MAD981068331) during this period, due to the proximity of the Site to the Great Pond Reservoir. On December 31, 1985, the USEPA provided the following Site status under CERCLIS: Petroleum – No Further Action. Based on information obtained in MassDEP's Sites Database, USEPA Region I sent the Pacella Brothers, Inc. a letter, dated April 28, 1995, indicating that this CERCLIS Site was designated as "No Further Remedial Action Planned" (NFRAP). MassDEP sent a letter, dated April 15, 1995, to Pacella Brothers, Inc. informing them of USEPA Region I's NFRAP decision, and that the Site is listed as "Remedial"

in MassDEP's "Transition List of Confirmed Disposal Sites" and assigned RTN 3-0000419. The MassDEP's letter also provided the following requirement for the Site: *At Remedial sites where remedial actions were completed before promulgation of the original MCP in 1988 (listed as "Other" in DEP's Transition List) no further response actions are required unless new information indicates that a site condition requires notification to DEP in accordance with the MCP, or the remedial actions are found to be no longer effective in protecting public health and the environment.* The release was later re-assigned RTN 4-3000419 when Randolph was transferred from the Northeast Regional Office of MassDEP to the Southeast Regional Office. In MassDEP's Sites Database, RTN 4-3000419 is listed as DEPNFR (MassDEP No Further Action), which means that response actions were conducted and the MassDEP determined that No Further Action was required for the Site.

Based on the 2011 to 2014 investigations, the following OHM were detected in soils of Lot 42 at levels above RCS-1 Reportable Concentrations, which is a 120-day reportable condition: (1) lead, nickel and vanadium; (2) benzene, C11-C22 aromatic hydrocarbons, C19-C36 aliphatic hydrocarbons, naphthalene, phenanthrene and fourteen other PAHs; and (3) PCBs. This contamination was determined to be located in discrete areas of Lot 42. Some of these OHM are present at levels inconsistent with the MassDEP's DEPNFR classification for RTN 4-3000419. In addition, the change in property use from vacant to residential changes the potential for risk issues at Lot 42.

On October 8, 2014, Dolben and GEC met with Equity and its consultant, Roberts, to discuss the findings of the due diligence investigations. At that time, Equity was notified of the presence of certain metals, PCBs, polycyclic aromatic hydrocarbons (PAHs) and extractable petroleum hydrocarbons (EPH) in soils at levels that exceed applicable Reportable Concentrations. On January 30, 2015, Nancy Roberts, LSP, of Roberts Consulting Inc., on behalf of Equity Industrial Randolph III, reported the 120-day reportable condition at Lot 42 to MassDEP. MassDEP assigned RTN 4-25464 to this condition.

Soils of Lot 42 contain PCB at levels up to 9.2 mg/kg. In addition to the MCP, PCB contamination is also regulated under the federal Toxic Substances Control Act (TSCA) [40 CFR 761]. Soils containing more than 1 mg/kg PCB should be reported to the U.S. Environmental Protection Agency, unless the PCBs were released prior to April 18, 1978.

The PCBs are present in the fill material at depths ranging from ground surface to at least 20 feet below ground surface at Lot 42 Exposure Points (EP) 1A/1B, 2B and 3A/3B, mostly at levels less than 1 mg/kg (Figure 4A). Higher levels of PCBs were detected in subsurface soils than in surface soils. These areas are the suspected locations of disposal of Orange Line materials and soils, based on fill history (see Section 2.2.2) and solid debris observed during test pitting. Based on the weight of

evidence, the fill was in place prior to the effective date of TSCA in 1978 [April 18, 1978]. The TSCA requirements for reporting do not apply to this Site.

On April 7, 2015, Dolben, GEC and Roberts met with MassDEP to discuss the planned redevelopment of the property as a residential apartment complex. MassDEP was provided with a summary of the investigative results conducted to that time, including the results of a Method 3 Risk Characterization, and were also provided a description of the planned soil remediation, soil processing and dewatering. The proposed plan was to conduct the remediation and construction activities under one or more RAMs. The following additional issues were covered during the meeting: (1) the role of TSCA relative to the presence of PCBs in soils; (2) the proper procedure to treat lead-contaminated soils on-Site to comply with the Resource Conservation and Recovery Act (RCRA); (3) the presence of Anthropogenic Background conditions for areas of the Site; (4) the proximity of wetlands and the Blue Hill River to the planned worked; (5) the presence of a Zone A on the property; and (6) other permits that were being obtained for the project. During the meeting, MassDEP stated that RTN 4-3023897 was not in compliance with the MCP because it had not yet been Tier Classified. MassDEP stated that the Phase I Report and Tier Classification Submittal should be submitted to MassDEP prior to or no later than the submittal of the RAM Plan.

The *Phase I Initial Site Investigation, Conceptual Phase II Scope of Work and Tier Classification Submittal* (Phase I Report) for RTNs 4-3023897 and 4-25464, combined, was submitted to MassDEP on July 29, 2015. These two RTNs were not linked in the submittal. Both release tracking numbers were classified as Tier II Sites. The Phase I Report documented the extensive amount of investigation conducted to that date on both Lots 37 and 42. Because of the planned development of a residential apartment complex at the 5 Pacella Park Drive property, a Method 3 Risk Characterization was included in the Phase I Report. The results of the Risk Characterization were used to design a remedial strategy to allow for the future residential use of the property by Great Pond Residential LLC.

A RAM Plan to support remediation activities (Remediation RAM Plan) was submitted to MassDEP on July 29, 2015. The Remediation RAM Plan described remedial activities for three areas of the property where significant risk of harm to a future resident was determined to exist: (1) exposure point Lot 37 EP 1; (2) exposure point Lot 42 EP 2B; and (3) exposure point Lot 42 EP 3A. The locations of these three exposure points are depicted in Figure 4A. The objectives of the Remediation RAM were two-fold:

(1) <u>For Lot 37 EP 1 and Lot 42 EP 2B: *in situ* treatment of lead-contaminated soils that are known to fail RCRA's TCLP lead criterion; where needed, to collect soil samples along the sides and / or bottom of the treatment area for total lead and TCLP lead analysis to determine if sufficient soils have been excavated and, if needed, treated to reduce lead leachability; to analyze the</u>

treated soils for total lead and TCLP lead to determine if these soils require additional treatment to reduce lead leachability to below the TCLP lead criterion; and to segregate the treated soils based on total lead levels for later re-use during the Construction RAM. The remediation goal was to treat all soils containing more than 600 mg/kg total lead, such that TCLP lead levels are less than the RCRA's TCLP lead criterion of 5 mg/l. The treated soils would then be placed at depths greater than 15 feet below final grade as part of the Construction RAM.

(2) For Lot 42 EP 3A, to excavate coal tar-contaminated soils and to transport the soils off-Site for either off-Site treatment at a treatment facility and / or recycling at an asphalt batching plant, as appropriate. The appropriate receiving facility(ies) would depend on the results of disposal criteria testing to be conducted during the Remediation RAM. The following clean-up criteria were used to determine which soils must be transported off-site to a receiving facility: (1) visible evidence of coal-tar contamination; (2) headspace screening results of soils using a 10.6 eV PID; and (3) initially, clean-up criteria for specific OHM, i.e., 3,000 mg/kg C11-C22 aromatic hydrocarbons, 300 mg/kg 2-methylnaphthalene, 300 mg/kg naphthalene, 300 mg/kg phenanthrene and 2-9 mg/kg depending on the individual carcinogenic PAH.

The estimated volume of soils to be excavated as provided in the Remediation RAM Plan are summarized below:

Location	Estimated Volume	Comment
Lot 37 EP 1	1,000 to 1,500 cubic yards	Excavation of lead-contaminated soils, and for those soil volume with >5 mg/l TCLP lead treatment of soils.
Lot 42 EP 2B	2,750 to 6,250 cubic yards	Excavation of lead-contaminated soils, and for those soil volume with >5 mg/l TCLP lead treatment of soils.
Lot 42 EP 3A	1,200 to 2,500 cubic yards*	Excavation of coal tar-contaminated soils, and transport off-site for treatment or recycling.
To Gain Access	10,000 cubic yards	Excavation of Site soils to obtain access to lead-contaminated or coal tar-contaminated soils.

*This volume was increased to 5,000 to 7,000 cubic yards through the RAM Plan Modification # 2 to the Remediation RAM, as described below.

Two Remediation RAM Plan Modifications were submitted during the period March to June 2016, which resulted in new or modified goals of the Remediation RAM. Based on the Remediation RAM Plan Modification No. 1, submitted on March 22, 2016, the additional goals were as follows:

1. The total volume of coal tar / coal tar-contaminated soils to be excavated was increased from between 1,500 and 2,500 cubic yards to between 3,000 and 5,000 cubic yards.

2. The potential coal tar excavation area, originally identified as Lot 42 EP 3A, was expanded into neighboring areas as depicted in Figure 11 from the RAM Plan Modification No. 1, submitted in March 2016.

3. Five pesticides were detected in the samples collected from the coal tar stockpiles; therefore, the confirmatory sidewall and bottom sampling program was expanded to include pesticide analyses via USEPA Method 8081B.

4. The original Remediation RAM Plan provided Site-Specific clean-up criteria for specific hazardous materials. Many of the confirmatory samples for the remedial areas have levels of specific PAHs, especially benzo(a)pyrene, above their clean-up criteria. In addition, pesticides were detected in coal tar stockpile samples. Little to no pesticide data existed for soils of the Site. Therefore, it was unknown how much pesticides, if present in the confirmatory soil samples, would impact the risk of harm for the Site or portions of the Site. The Remediation RAM Plan was modified to allow for the use of a location-specific risk assessment to determine when adequate remediation has been completed (i.e., when total cancer and non-cancer risk estimates were below the MCP's cancer risk limit of 1E-05 and non-cancer risk limit of 1).

5. More coal tar contaminated soils required excavation and off-Site disposition than originally anticipated in the original Remediation RAM Plan. Most of the coal tar-contaminated soils were hazardous waste and could not be disposed in a landfill. However, a portion was suitable for landfilling. 310 CMR 40.0442(2)(a) permits the landfilling of up to a cumulative 500 cubic yards of contaminated material shipped under a BOL as part of a RAM, following a feasibility evaluation/cost-benefit analysis (see Section 6.1 in the *Remediation RAM Plan Modification, Status Report #2 and Remedial Monitoring Report #2*). The approximate cost for landfilling is $91 per ton versus $300 per ton for treatment. The original Remediation RAM Plan gave preference for recycling or treatment of the coal tar-contaminated soils, unless a cost-benefit analysis was conducted. Given the costs for remediation conducted by March 2016 (both for the on-Site treatment of lead-contaminated soils and the off-site treatment of coal tar-contaminated soils), a decision was made to dispose suitable coal tar-contaminated soils at a landfill up to another 247 cubic yards.

Based on the *Remediation RAM Plan Modification No. 2*, submitted on June 13, 2016, the additional goals were as follows:

1. The original lead-contaminated soil remediation program entailed treatment to reduce leachable lead levels under the Remediation RAM Plan followed by on-Site re-use of lead-contaminated soils under the Construction RAM Plan. The initial reagent used for treatment

is called SSTT-CS, which is a powdered, semi-dry product mostly comprised of calcium sulfate. Due to a change in treatment companies, the new reagent is Portland cement, which contains calcium salts including calcium sulfate. The remediation of the remainder of the lead-contaminated soils of Lot 42 EP2B was further modified by allowing for either on-Site re-use of lead-contaminated soils at depths more than 15 feet below final grade or transport of lead-contaminated soils off-Site for landfilling at Republic Services facility in Niagara NY. The on-Site treatment and, if conducted, off-site disposition of the lead-contaminated soils would be conducted under the Remediation RAM Plan.

2. The total volume of coal tar / coal tar-contaminated soils to be excavated was increased from between 3,000 and 5,000 cubic yards as described in the RAM Plan Modification #1 to between 5,000 and 7,000 cubic yards. The potential coal tar excavation area, originally identified as Lot 42 EP3A, was expanded into neighboring areas as depicted in Figure 11 of the RAM Plan Modification, RAM Status Report #2 and RMR #2. Originally, the residual PAH-contaminated soils associated with the coal tar contamination, stained soils from debris fires, and the PAH-contaminated soils of Lot 42 EP3C were to be re-used on-Site at depths more than 15 feet below final grade, as specified in the original Construction RAM Plan and the modifications to the Construction RAM Plan. In June 2016, there appeared to be insufficient capacity for on-Site re-use of these non-hazardous PAH-contaminated soils. If additional capacity was found, all or some of these soils would be re-used on-Site under the Construction RAM. Otherwise, the disposition of these soils would be handled under the Remediation RAM Plan.

The Remediation RAM was conducted between August 2015 and September 2016. The results of the Remediation RAM are documented in detail in the *Release Abatement Measure (RAM) Status Report #3, Remedial Monitoring Report #3 and RAM Completion Report to Support Remediation Activities*, which was submitted to MassDEP on September 19, 2017.

As presented in the Remediation RAM Plan, for Lot 37 EP1 and Lot 42 EP2B, an estimated 3,750 to 7,750 cubic yards of lead-contaminated soil was projected to be excavated and treated to reduce TCLP lead levels. Approximately 8,480 cubic yards of material was excavated. After removing solids from the soils, approximately 3,875 cubic yards of processed lead-contaminated soils remained, of which 3,800 cubic yards of processed soils were treated to reduce TCLP lead levels. The amount of material excavated is approximately 9.4% greater than the upper range (7,750 cubic yards) of soils estimated in the Remediation RAM Plan. However, once the soils were processed to remove boulders, rock, concrete and other solids, the volume of soil excavated and treated is near the lower range of soils estimated in the Remediation RAM Plan. The final confirmatory sidewall and bottom samples collected from Lot 37 EP1 and Lot 42 EP2B contained total lead levels less than 600 mg/kg (i.e., below

the clean-up goal). The excavated processed soils containing elevated TCLP lead were treated until TCLP lead levels were less than the RCRA TCLP lead criterion (5 mg/l). The treated and untreated lead-contaminated soils that contain TCLP lead levels less than 5 mg/l were temporarily placed back in polyethylene-lined excavation holes and covered with polyethylene, until the soils could be placed in permanent soil repositories located more than 15 feet below final grade during the Construction RAM. Based on the work conducted in both Lot 37 EP1 and Lot 42 EP2B, the remedial objectives identified in bullet (1), above, of the Remediation RAM Plan were met and no further remediation of lead-contaminated soils was determined to be needed during the Remediation RAM.

For the coal tar- and PAH-contaminated areas (Lot 42 EP3A, RGP-4, RGP-345, RGP-7 and RGP-10), approximately 9,128 cubic yards of coal tar and coal tar-contaminated soils were excavated and transported off-Site for treatment (8,875 cubic yards) or disposal (253 cubic yards). Based on the Remediation RAM Plan Modification No. 2 (June 2016), the following soil volumes could be transported off-site: (1) 5,000 to 7,000 cubic yards of coal tar and grossly coal tar-contaminated soils; and (2) 2,200 to 3,000 cubic yards of residually PAH-contaminated soils. The total coal tar-contaminated and residual PAH-contaminated soils are within the combined range of 7,200 and 10,000 cubic yards of soils of coal tar/PAH-contaminated soils identified in the RAM Plan Modification No. 2. Final confirmatory sidewall and bottom soil samples were collected from RGP-7, RGP-345 and RGP-10 and analyzed for PAHs and/or pesticides. The results for each RGP area were used to derive exposure point concentrations that were entered into MassDEP's Residential Risk Assessment ShortForm. For each area, the resulting cancer, sub-chronic non-cancer and chronic non-cancer risk estimates were less than MCP's cancer and non-cancer risk limits. Based on the work conducted in the expanded Lot 42 EP3A area, the remedial objectives for the coal tar contamination have been met and no further remediation is needed during the Remediation RAM.

A RAM Plan to support construction activities (Construction RAM Plan) was submitted to MassDEP on October 9, 2015. The principal objectives of the Construction RAM Plan were two-fold:

1. <u>To construct a storm drainage system, sedimentation basin / wetland to service both the residential apartment complex and Pacella Park Road and to process the fill material to make it of sufficient geotechnical strength to allow Site development.</u> The storm water drainage system / sedimentation would reduce the amount of storm water that would infiltrate through the contaminated fill before discharging to the wetland during and/or after construction. The removal of all fill material from the sedimentation basin area would allow for its later conversion into a wetland near the end of construction. The RAM Plan described the plan to excavate fill material following one or more of the following scenarios:

a. from ground surface to the bottom of the fill layer (if de-watering is feasible and costs aren't prohibitive to excavate all the fill material);

b. from ground surface to the bottom of the fill layer or to the top of the water table, whichever occurs first, in the areas where buildings will be constructed, so that soils can be processed to improve geotechnical strength of soils beneath the buildings plus from ground surface to six feet below grade, in areas where pavement will be installed, so that soils can be processed to improve geotechnical strength of soils beneath the buildings and pavement (most likely); and / or

c. from ground surface to whatever depth is necessary in order to find sufficient storage below 6 or 15 feet (as appropriate) to place contaminated soils of Objective no. 2.

The excavated fill would then be processed (processed soils) by removing boulders, bedrock blast debris and demolition material for appropriate on-Site re-use, off-Site recycling and off-Site disposal. Some material recovered from the excavate, i.e., boulders, bedrock blast debris and unstained/unpainted concrete, would be broken up for use as rip rap along the detention basins and slopes of the fill leading to the Blue Hill River and / or will be crushed (crushed rock) and added to the processed soils to improve its geotechnical strength. Any excess boulders, bedrock blast debris and unstained/unpainted concrete would be transported off-Site for re-use. Finally, the excavations would be backfilled in lifts with compaction between lifts until final grade is reached, as approved by the Randolph Conservation Commission. Building footings and foundations would be constructed after the backfilling stage of construction.

2. To track certain soil volumes from excavation, through processing to on-Site re-use at specified depths and locations. The purpose of this objective was to ensure the achievement of No Significant Risk to human receptors for certain volumes of soils by placing them more than 15 feet below new final grade (for no need of a Notice of AUL) or by placing more than 6 feet below new final grade (in which case a Notice of AUL might be needed). The purpose of this objective was also to place the most PCB-contaminated soils at depths of either 15- or 6-feet below new final grade to minimize residential exposure. With regards to re-use requirements, each exposure point is briefly described below. The location of each exposure point is depicted in Figure 4A.

a. Exposure point Lot 37 EP1: Following treatment of lead-contaminated soils during the Remediation RAM, treated soils and other lead-contaminated soils not requiring treatment (based on confirmatory soil sampling conducted during the Remediation RAM) were segregated from other soils using polyethylene sheeting. These segregated soils required

continued tracking during the Construction RAM. The plan was to re-use these soils at depths more than 15 feet below the new final grade, to avoid the need for a Notice of AUL. If all segregated soils couldn't be placed more than 15 feet below new final grade, the following activities would be conducted: (1) soils containing more than 900 mg/kg should be placed more than 15 feet below grade; and (2) soils containing 600 to 900 mg/kg lead should be placed more than 6 feet below grade, covered by a marker barrier, with maintenance of the marker barrier and soils below 6 feet through a Notice of AUL. The purpose of placing soils containing more than 900 mg/kg lead more than 15 feet below grade is to mitigate potential risks to utility workers and future construction workers. Soils containing less than and more than 900 mg/kg were segregated from each other based on confirmatory soil sampling during the Remediation RAM.

b. Exposure point Lot 37 EP2: No restrictions exist for re-use of soils from this exposure point.

c. Exposure point Lot 42 EP1A: Excavation of this exposure point would be required until natural native soils and / or bedrock are reached on the sidewalls and / or bottom of the excavation, or until PCB levels are less than clean-up standards based on confirmatory sampling of sidewalls and/or bottom. Excavated soils within EP1A would be placed in approximately 55 cubic yard stockpiles. Initial processing would remove all rock larger than 1 foot for re-use on Site, and would also include the removal of any non-soil debris. The remaining soils would be stockpiled on polyethylene sheeting and composite samples would be collected for PCB analysis. This data would be used to determine the vertical interval where each stockpile could be re-used. The most contaminated soils would be re-used at depths more than 15 feet of new final grade at Lot 42 EP1A. Less contaminated soils would be re-used at shallower soil intervals. If possible, all soils containing PCBs should be placed 6 feet or more below grade. However, if there is not sufficient storage capacity below 6 feet, all soils placed six feet or shallower should have PCB concentrations less than 1 mg/kg. The soils containing PCB at 1 mg/kg or less could be re-used anywhere on Lot 42. If feasible, these soils should be re-used at depths more than 6 feet below grade, beneath a building foundation or beneath pavement.

d. Exposure point Lot 42 EP1B: No restrictions exist for re-use of soils from this exposure point. However, the portion of this exposure point located near Lot 42 EP1A contains PCBs at levels less than 1 mg/kg. If feasible, these soils should be re-used on Lot 42 and, if feasible more than 6 feet below the new final grade, beneath building foundation or beneath pavement.

e. Exposure point Lot 42 EP2A: No restrictions exist for re-use of soils from this exposure point.

f. Exposure point Lot 42 EP2B: Following treatment of lead-contaminated soils during the Remediation RAM, treated soils and other lead-contaminated soils not requiring treatment (based on confirmatory soil sampling conducted during the Remediation RAM) were segregated from other soils using polyethylene sheeting. During the Construction RAM, these segregated soils required continued tracking. These soils should be re-used at depths more than 15 feet below the new final grade, to avoid the need for a Notice of AUL. If all segregated soils can't be placed more than 15 feet below new final grade, the following activities would be conducted: (1) soils containing more than 900 mg/kg should be placed more than 15 feet below grade; and (2) soils containing 600 to 900 mg/kg lead should be placed more than 6 feet below grade, covered by a marker barrier, with maintenance of the marker barrier and soils below 6 feet through a Notice of AUL. The purpose of placing soils containing more than 900 mg/kg lead more than 15 feet below grade would be to mitigate potential risks to utility workers and future construction workers. Soils containing less than and more than 900 mg/kg were segregated from each other based on confirmatory soil sampling during the Remediation RAM.

g. Exposure point Lot 42 EP3A: Tracking of soils for this exposure point would be needed if the levels of EPH subsets and specific PAHs are not reduced to their clean-up standards, based on confirmatory sampling during the Remediation RAM. If clean-up standards are met during the Remedial RAM, the remaining soils of Lot 42 EP3A could be re-used anywhere on Lot 42 but if feasible more than 6 feet below the new final grade, beneath building foundation or beneath pavement.

h. Exposure point Lot 42 EP3B: Tracking of soils would be needed for this exposure point only to ensure that processed soils are re-used in areas already containing PCB-contaminated soils at levels above 1 mg/kg. These soils could be re-used on Lot 42 but if feasible more than 6 feet below the new final grade, beneath building foundation or beneath pavement.

i. Exposure point Lot 42 EP3C: Tracking of soils for this exposure point would be needed to ensure that soils with levels of PAHs above the clean-up standards are re-used at depths below 15 feet of new final grade. Confirmatory sampling and analysis of PAHs would be needed during the Construction RAM. These soils can be re-used anywhere on Lot 42 at depths more than 15 feet below new final grade. If sufficient storage capacity is not available 15 feet below grade, the soils can be placed more than 6 feet below new final

grade, covered by a marker barrier, with maintenance of the marker barrier and soils below 6 feet through a Notice of AUL.

Note: If sufficient space was determined not to be available to allow re-use of processed soils at specified locations and depths, the soils of exposure points Lot 37 EP1 (if applicable), Lot 42 EP2B (if applicable), Lot 42 EP3A (if applicable) and/or Lot 42 EP3C could be placed beneath paved areas or building foundation, which would serve as protective barriers. The re-use of these soils beneath these protective barriers would require the recording or registering of a Notice of AUL to require maintenance of the paved area or building foundation. If soils of Lot 37 EP1 or Lot 42 EP2B are re-used at depths shallower than 6 feet and utility lines will be located in these soils, clean utility corridor(s) would be needed if lead levels in the 0-6 foot interval exceed 900 mg/kg, to mitigate potential risk of harm to utility workers. If so, details on the construction and location of each utility corridor would be provided in the next RAM Status Report or RAM Completion Report. If this approach is used, the maintenance of the clean utility corridor(s) and protective barriers would be specified in the Notice of AUL.

Other objectives of the Construction RAM Plan were for the placement of pavement and building foundations over most of the Site to mitigate the amount of stormwater that would percolate through the processed fill material and to reduce the potential for OHM in the fill from leaching into the stormwater and eventually discharging to the wetland. Also, placement of pavement and/or building foundations over the on-Site soil repositories would mitigate the potential for changing final grade in the future and would further reduce the potential for future human exposure to the contaminated soils of the repositories.

Three Construction RAM Plan Modifications were submitted during the period December 2015 to March 2016, which resulted in new or modified goals to the Construction RAM. Based on the Construction RAM Plan Modification No. 1, submitted on December 14, 2015, the following additional goals were identified:

1. The Construction RAM Plan anticipated that the unstained/unpainted concrete, unstained/unpainted brick and rock/boulders/bedrock blast debris would be re-used on-Site, by: (1) crushing the concrete, brick and rock to supplement soils to improve structural strength of the soils; and / or (2) by re-using as rip rap along the storm water detention basins or along the slope of the fill leading to the Blue Hill River and associated wetlands. The initial plan was to transport any discovered asphalt pieces off-site for recycling. The Construction RAM Plan Modification No. 1 added the on-site re-use of asphalt pieces by crushing the asphalt and using it as base material beneath the paved parking areas and access roads that will be constructed on-Site. The planned on-Site crushing and re-use of Asphalt, Brick & Concrete (ABC) material

is an exempt activity pursuant to 310 CMR 16.03. MassDEP and the Town of Randolph Board of Health were provided regulatory notifications of the planned ABC recycling, as documented in the Construction RAM Plan.

2. Lot 37 PL-1 or RGP-2 (Residences at Great Pond Soil Contamination Area 2): On November 6, 2015, dark, odorous soils were discovered during excavation on Lot 37, outside the lead-contaminated area. Although little contamination was detected in these soils, the soils had a strong, objectionable odor. These soils were designated PL-1 and later re-named RGP-2. The RAM Plan Modification No. 1 called for the excavation and off-site transport of these soils to the Glenview Landfill in Chelmsford, Massachusetts. The volume of soils to be excavated and transported to Glenview Landfill was estimated to be no more than 100 cubic yards. Confirmatory sidewall and bottom samples would be collected for analysis of PAHs.

Based on the Construction RAM Plan Modification No. 2, submitted on December 17, 2015, the following additional goal was identified:

1. Lot 37 RGP-8: On December 8, 2015, soils having a sulfurous, old gasoline odor were discovered on Lot 37, outside the lead-contaminated area. During the period December 8 to 12, 2015, approximately 420 cubic yards of soils were excavated, and confirmatory sidewall and bottom samples were collected and analyzed for EPH, PAHs, volatile petroleum hydrocarbons (VPH) and volatile organic compounds (VOCs). The levels of C9-C10 aromatic hydrocarbons (280 mg/kg) and 2-methylnaphthalene (2.2 mg/kg) detected in the soil exceeded the Method 1 RCS-1 Reportable Concentrations (100 and 0.7 mg/kg, respectively). This new reportable condition was reported to MassDEP on December 15, 2015 and assigned RTN 4-25906. The Construction Plan Modification No. 2 described additional planned excavation and confirmatory sampling for RGP-8 (RTN 4-25906). The excavated soils would be transported to either: (1) ESMI of Loudon, New Hampshire, for treatment; or (2) Glenview Landfill (an unlined landfill) in Chelmsford, Massachusetts, for re-use as daily cover. The volume of soils to be transported was estimated to be no more than 1,000 cubic yards.

Based on the Construction RAM Plan Modification No. 3, submitted on March 22, 2016, the following modified clean-up goal was identified:

1. Remediation would be conducted in the following locations: Lot 37 EP1, Lot 42 EP1A, Lot 42 EP2B, Lot 42 EP3A, Lot 42 EP3C, RGP-1 to RGP-9 and RGP-3456. To determine if remediation is sufficient to result in No Significant Risk of harm for residents, the Construction RAM Plan was modified to allow for either: (1) the use of the Site-specific clean-up standards specified in Section 2.1; or (2) the calculation of location-specific risk estimates using

MassDEP's Resident ShortForm or GEC's residential risk assessment workbook. Exposure point concentrations would be calculated following methods allowed by the MCP [310 CMR 40.0900]. For specific contaminants of concern not analyzed in a remediated location, the exposure point concentration for the exposure point, within which the remediated location is located, used in the Method 3 Risk Characterization documented in the Phase I Initial Site Investigation, would be used as the exposure point concentration for the remediated location.

NOTE: During construction activities, fourteen pockets of soil contamination were identified in addition to the contamination identified in the initial Construction RAM Plan. These areas were identified as RGP-1 to RGP-13, and RGP-3456. The locations of these areas are depicted in Figure 4B. RGP-1, RGP-2, and RGP-3 are also referred to as SB-1 (Sedimentation Basin Area 1), PL-1, and SB-2, respectively. RGP-3, RGP-4, RGP-5, RGP-345, RGP-7, and RGP-10 are coal tar-contaminated areas that were contiguous or nearly contiguous with the coal tar contamination of Lot 42 EP3A.

The Construction RAM was conducted between October 2015 and November 2017. The results of the Construction RAM are documented in detail in the *Release Abatement Measure (RAM) Status Report #3 and RAM Completion Report to Support Construction Activities*, which was submitted to MassDEP on November 11, 2017.

The Construction RAM was conducted in conjunction with a Remediation RAM to prepare Lots 37 and 42 for construction of a residential apartment complex, consisting of five apartment buildings, a club house with swimming pool, and paved parking areas. These two lots, located on Pacella Park Drive in Randolph, Massachusetts, were the location of historic placement of fill from the construction of the Orange Line and from demolition of a Roxbury Mill complex during the 1970's. In areas of these lots, the soils contained lead, coal tar and PCBs. In addition, a significant amount of rock / boulders, concrete, brick, railroad ties and rails, and other solids were present in the fill, which made the soils unsuitable to structurally support buildings. The Construction and Remediation RAMs were conducted for the following principal purposes: (1) to remediate those areas of the two lots where significant contamination was located; (2) to remove the solids from the soils and process the soils to increase its structural strength; and (3) to improve storm water handling for the two lots and Pacella Park Drive. Additional purposes of the RAMs were the following: (1) an inspection of all soils during excavation for evidence of previously unknown pockets of contamination; (2) the placement of pavement and building foundations, which would allow for the reduction of stormwater percolating through the fill; and (3) the placement of pavement and/or building foundations over the on-Site soil repositories to further reduce the potential for future human exposure and to reduce the potential for changing final grades over the repositories in the future. The two RAMs were conducted concurrently; however, the Remediation RAM was initiated and completed first.

The two RAMs entailed excavation of discrete exposure points that were identified as contaminated: (1) Lot 37 EP1 (lead); (2) Lot 42 EP1A (PCBs); (3) Lot 42 EP2B (lead); (4) Lot 42 EP3A (coal tar); and (5) Lot 42 EP3C (PAHs). During the RAMs, other areas of contamination were discovered and were assigned identifiers RGP-1 to RGP-13, RGP-345 and RGP-3456; many of these areas are associated with Lot 42 EP3A. The locations of the discrete exposure points and RGP's are depicted in Figures 4A and 4B, respectively.

The following table summarizes the contractor and their responsibilities throughout the site development:

Contractor	**Responsible Activity**
Goldman Environmental Consultants, Inc. (GEC)	Construction and Remediation RAM Oversight
Environmental Soil Management, Inc. (ESMI)	Remediation RAM Transportation, Treatment and Disposal (Coal Tar & Elevated PAH Soil)
Earth Connections, Inc. (ECI)	Remediation RAM – Lead Treatment for on-site disposal
EQ Northeast (US Ecology)	Remediation RAM Transportation, Treatment and Disposal (Coal Tar)
Northeast Interiors, Inc. (NEI)	Construction RAM/Site Development
Callahan, Inc.	Building Foundation and SOG, Final Soil Placement Cap
W.L. French Excavating Corporation	Contaminated Soil Transportation and Disposal

During the two RAMs, approximately 207,900 cubic yards of soils and other solid materials were excavated from Lots 37 and 42. Approximately 41,700 and 166,200 cubic yards of fill material were excavated from Lot 37 and Lot 42, respectively. The entire excavation area is depicted in Figure 4C. Of this material approximately 73,000 cubic yards consisted of solid materials, such as boulders/rocks, concrete, brick, asphalt, rebar, railroad ties and rails, tires and other debris, and approximately 134,900 cubic yards consisted of soil. The rocks/boulders, unpainted/unstained concrete and unpainted/unstained brick were re-used on-Site, either by crushing and using to increase the structural strength of the soils or as rip rap along the embankment of the retention basins/drainage swale and the slope leading to the Blue Hill River. Asphalt was also re-used on-Site. It was crushed and used as base material beneath the paved parking lot for Building 4. Other solid materials were either shipped off-site for recycling (e.g., metals), reuse (e.g., rock) or disposal. Approximately 4,500 cubic yards of rock from Lot 42 (generated when breaking up rock to adjust grade) were transported to the following locations: (1) T.L. Edwards in Avon, Massachusetts to be crushed and re-used for asphalt batching; (2) Rosenfeld Concrete in Hopedale, Massachusetts to be crushed and used to make concrete; and (3) MJM Corp. in Brockton, Massachusetts for re-use as crushed rock.

Of the remaining 134,900 cubic yards of soils, approximately 5,800 cubic yards of contaminated soils were placed in on-Site soil repositories, approximately 7,100 cubic yards of <1

mg/kg PCB-contaminated soils were re-used beneath the footprints of Buildings 1, 2 and 3, and approximately 9,900 cubic yards of contaminated soils were transported off-site for treatment (mostly coal tar and coal tar-contaminated soils) or for re-use as daily landfill cover (mostly PAH-contaminated soils for which there was inadequate space to put in on-Site soil repositories). The areas of Lots 37 and 42 where soils were excavated for remedial purposes are depicted on Figure 4D. The soils placed in repositories originated from the following areas:

1. Lot 37 EP1 and Lot 42 EP2B: These soils contained elevated levels of lead and were treated, as needed under the Remediation RAM, to reduce its TCLP lead levels to below 5 mg/l (the RCRA TCLP lead criterion).

2. Lot 42 EP3C, RGP-1, RGP-3, RGP-6, RGP-3456 and RGP-9: These soils contained moderately elevated levels of PAHs, but little to no volatile PAHs.

3. Lot 42 EP1A: These soils contained PCBs at levels ranging up to 9.2 mg/kg, based on pre-excavation analytical data. During the excavation of these soils, PCBs were detected at levels ranging up to 4.79 mg/kg out of 205 samples analyzed.

The lead- and PAH-contaminated soils were placed in soil repositories located more than 15 feet below final grade. These repositories are located beneath Building 4, the club house and the parking lot of Building 3, as depicted on Figure 3C. These soils were placed at depths such that there would be no exposure to residents, utility workers or construction workers under the MCP definition of soil exposure intervals for these receptors. The content and elevation of these three repositories and the final grade over these three repositories are provided below:

Repository	Repository Elevation Range (feet above MSL)	Contents of Repository	Elevation of Final Grade over Repository
Building 4	116 to 125	Lot 37 EP1 700 CY Lot 42 EP2B 968 CY RGP-6 110 CY RGP -1 240 CY	143 feet above MSL
Club House	118 to 127	Lot 37 EP1 275 CY Lot 42 EP2B 1462 CY RGP-3456 150 CY RGP-1 55 CY Lot 42 EP3C 100 CY RGP-9 50 CY RGP-6 60 CY	143 feet above MSL
Building 3 Parking Lot	118 to 121	Lot 42 EP2B 480 CY RGP-3 86 CY	136 feet above MSL

MSL = Mean Sea Level CY = Cubic Yards

Approximately 8,200 cubic yards of PCB-contaminated soils (with a small amount containing coal ash) were excavated from Lot 42 EP1A. The soils containing between 1 and 5 mg/kg PCBs (approximately 1,100 cubic yards) were placed in a soil repository beneath Building 1, located 14 feet or more below grade. The soils containing between 3 and 5 mg/kg PCBs or containing coal ash were placed at the bottom of the Building 1 repository, at depth intervals ranging from 18.5 to 20.5 feet below final grade (approximately 135 to 137 feet above mean sea level). The soils containing between 1 and 3 mg/kg PCBs were placed at depth intervals 14 to 20.5 feet below grade (i.e., approximately 135 to 141.5 feet above mean sea level). Approximately 1,100 cubic yards of PCB-contaminated (with a small amount of PAH-contaminated) soils were placed in the Building 1 Soil Repository. The final grade elevation above the Building 1 soil repository is 155.5 feet above mean sea level.

Approximately 7,100 cubic yards of soils excavated from Lot 42 EP1A contained less than 1 mg/kg PCBs. These soils were reused mostly over the PCB-contaminated soils beneath Building 1, with a small volume (approximately 100 cubic yards) beneath Buildings 2 and 3. These soils are not considered as being within a soil repository, but were reused beneath a building to minimize the potential for future contact.

Confirmatory sidewall and bottom samples were collected and analyzed to determine whether each distinctive excavation area was sufficiently excavated. The decision was based on a comparison to Site-specific clean-up standards or on a Site-specific risk assessment, as described below for each area:

1. Lot 37 EP1 and Lot 42 EP2B: Excavation conducted until all confirmatory soil samples contained less than Site-specific clean-up standard for lead (i.e., 600 mg/kg).

2. Lot 42 EP3A (also called RGP-7), Lot 42 EP3C, RGP-1, RGP-2, RGP-8, RGP-9, RGP-10 and RGP-12: Excavation conducted until No Significant Risk of harm was found to exist based on individual Site-specific risk assessments using confirmatory soil samples. Prior to remedial excavation, RGP-8, which was located on Lot 37, was identified as a new reportable condition and was assigned RTN 4-25906. After the completion of excavation at RGP-8, RTN 4-25906 was linked to the RTN 4-3023897, which applies to Lot 37.

3. RGP-345 (which also includes RGP-3, RGP-4, RGP-5, RGP-6 and RGP-3456): Excavation conducted until No Significant Risk of harm was found to exist based on Site-specific risk assessment using confirmatory soil samples.

Two RGP locations (RGP-11 and RGP-13) were initially identified as suspect contaminated areas, but were found not to be significantly contaminated based on the results of soil sampling and a

Site-specific risk assessment. These two areas were not excavated separately, but were included in the Site-wide soil excavation.

Approximately 112,100 cubic yards of Site soils were excavated (exclusive of solid debris) outside of the separate remedial areas. During the initial Risk Characterization, documented in the Phase I Initial Site Investigation, No Significant Risk of harm was found to exist for these soils. These soils were processed to increase structural strength, then were re-used on-Site to support building construction and grading of the two lots. Most of these soils will be or are covered by building foundations or paved parking areas.

The sedimentation basin used to manage storm water during construction was converted into a wetland to receive storm drainage from the apartment complex and Pacella Park Drive. Two rain gardens were installed to handle some of the roof drainage. A storm water drainage system, consisting of drain lines, catch basins, etc., was installed. The constructed wetland is located in an area where soils were excavated to natural soils (i.e., all fill was removed). Pavement and building foundations were constructed over the processed soils. Refer to Figure 3D for the locations of the storm drainage system, rain gardens and constructed wetland. Refer to Figure 3E for the planting plan for the constructed wetland.

All excavated soils have either been removed from the Site, re-used on-Site or placed in on-Site soil repositories. Based on the results of the two RAMs, No Significant Risk of harm has been achieved, as described in Section 3.2. The Construction RAM was completed when all soil processing and handling operations ceased at the property and all excavated materials were re-used on-site or removed from the property.

3.0 RISK CHARACTERIZATION

A baseline Method 3 Risk Characterization was submitted in Appendix A of the Phase I Report, and was prepared to support the Remediation and Construction RAM Plans that were submitted at the same time as or shortly after the Phase I Report. This original Method 3 Risk Characterization identified specific exposure points on each lot that required remediation so that No Significant Risk of harm would exist for the planned residential use. The results of the baseline Method 3 Risk Characterization are described in Section 3.1.

During the Remediation and Construction RAM Plans, the exposure points where Significant Risk of harm was determined to exist and other discrete areas of contamination discovered during site-wide soil excavation were remediated such that No Significant Risk of harm was achieved. The results of the risk assessments for the remediated exposure points and discrete areas were provided in various

RAM Status and Completion Reports, as each location was remediated. The results of these post-remedial risk assessments are described in Section 3.2.

3.1 Pre-Remedial Risk Characterization Findings

The baseline Method 3 Risk Characterization is contained in Section 8.0 of Appendix A (*Supporting Investigations and Assessments for Remedial Abatement Measure (RAM) Plan*) of the Phase I Report, which was submitted to MassDEP on July 29, 2015. Nine exposure points were identified for the property, based on the specific lot, distribution of OHM and location on the lot (for Lot 42 only). Lot 37 had two exposure points: (1) Lot 37 EP1, which had elevated levels of lead in soils; and (2) Lot 37 EP2, which had low levels of OHM in soils. Lot 42 had seven exposure points: (1) Lot 42 EP1A, located on the southwest side of the lot, and which contained PCBs in soils at levels less than 10 mg/kg; (2) Lot 42 EP1B, located on the southwest side of the low, where little fill was present and low levels of OHM were present in the soils; (3) Lot 42 EP2A, located on the northwest side of the lot, where low levels of OHM were present in soils; (4) Lot 42 EP2B, where elevated levels of lead were present in soils; Lot 42 EP2B was located east of Lot 42 EP2A and west of Lot 42 EP3B; (5) Lot 42 EP3A, where coal tar was observed in the subsurface and where elevated levels of EPH, naphthalene and carcinogenic PAHs were detected in soils; Lot 42 EP3A was located in the eastern portion of Lot 42; (6) Lot 42EP3B, which was comprised of most of the eastern portion of Lot 42 and where soils comprised of fill contained low levels of OHM; and (7) Lot 42 EP3C, located at the southeast corner of Lot 42, where elevated levels of carcinogenic PAHs were detected in soils. Refer to Figure 4A for the locations of these exposure points.

The soils located outside the localized areas of contamination, which were determined to require remediation, contain low levels of OHM that are persistent OHM, such as metals, PAHs and PCBs. These OHM could be taken up by plants or dusts containing these OHM could stick to the plants. To mitigate the potential for exposure to these OHM by residents from consumption of edible site-grown produce, the gardening of edible produce is presumed conducted under Best Management Practices. Refer to Appendix D for more details.

The following assumptions were used in the baseline risk characterization: (1) non-commercial gardening of edible produce in a residential setting will be managed under Best Management Practices; and (2) concentrations of certain OHM in specific areas of the Site are consistent with Anthropogenic Background concentrations. Note: The following description of Anthropogenic Background as it applies to specific exposure points is based on observations both prior to and during the Remediation RAM and Construction RAM excavation activities.

The historic fill is comprised of urban soils plus the following materials: concrete slabs and other concrete materials, granite blocks and slabs, large boulders, blasted bedrock material, bricks, asphalt, metal pipes, plastic pipes, wire, steel rebar, chain-link fencing, lumber, tree limbs and stumps, glass, coal pieces and coal ash, wood ash, charred wood, railroad ties, torn poly sheeting, plastics, porcelain / ceramics, sheet metal, roofing materials, chain-link fencing and tire pieces. This material reportedly originated from materials removed during the construction of the Orange Line and demolition material, such as from a Roxbury textile mill. Also, the blasted bedrock material originated during the development of the Great Pond Commerce Park. Based on available Site history, this material was placed prior to the effective date of M.G.L. c. 21e and the MCP (i.e., prior to 1983), and most portions of the property meet MCP's definition of historic fill and Anthropogenic Background.

There was very little visible evidence of chemical production waste, manufacturing waste, wastes from production of metal or mineral ores, residue, slag, tailings, drums or tanks. It does not contain material that was disposed at a municipal solid waste dump, burning dump, landfill, waste lagoon or other waste disposal location. The property has always been vacant; therefore, no OHM waste material were generated as a result of operations or activities at this location. However, certain pockets of contamination were discovered that do not meet MCP's definition of Anthropogenic Background. Soils originating from the following locations were not considered consistent with Anthropogenic Background:

1. Lot 37 EP1: The fill material in this location appears to be demolition debris from the former Roxbury Mill complex. Architectural granite was still evident, but the wood members appear to have largely degraded. The lead is believed to have originated from painted wood that subsequently degraded. Because these soils contained elevated levels of lead, these soils are not assumed consistent with Anthropogenic Background. These lead-contaminated soils were excavated, treated and placed more than 15 feet below final grade.

2. Lot 42 EP2B: The fill material in this location appears to be demolition debris from the construction of the North Station and Orange Line. Based on Historic Atlases (Appendix B), obtained from https://www.mapjunction.com/, several structures were located in the present location of the North Station, including a building that housed the Fitchburg RR Passenger Depot (1890, 1908 and 1917), North Station Terminal Building (1928) and North Station Industrial Building (1938). Within Lot 42 EP2B, orange- and green-painted concrete and brick was evident as well as a whitish layer associated with the brick. The highest levels of lead were detected where these materials were found. Because these soils contained elevated levels of lead, these soils are not assumed consistent with Anthropogenic Background. These lead-contaminated soils were excavated, treated and placed more than 15 feet below final grade. Note: The Historic Atlases

obtained from https://www.mapjunction.com/ were an 1874 Atlas of Suffolk Co. Volume 1 Boston Proper, issued by G.M. Hopkins & Co., and the 1890, 1908, 1917, 1928 & 1938 Atlas books of the City of Boston Vol. 1 Boston Proper, published by G.W. Bromley & Co.

3. Lot 42 EP1A: The fill in this area appear to be associated with material from the Orange Line. The detection of PCBs was associated with the presence of railroad ballast stone and, to a lesser extent, railroad ties. The soils, containing at least 1 mg/kg PCBs, were excavated and placed more than 14 feet below final grade in the Building 1 soil repository. Coal ash was observed in soils. Most PAHs were present at levels consistent with MassDEP's soils associated with fill containing coal ash or wood ash. Soils containing a lot of coal ash were placed between 18 and 20 feet below final grade. Soils containing <1 mg/kg PCBs were re-used beneath the Building 1, 2 or 3 foundations. Because these soils contained elevated levels of PCBs, these soils are not assumed consistent with Anthropogenic Background. However, the levels of metals detected in soils from this location are consistent with the levels detected in soils of other exposure points considered consistent with Anthropogenic Background.

4. Lot 42 EP3A: The material from this location appears to originate from the Orange Line. Based on Historic Atlases (Appendix B), a coal gasification plant was located on the east side of the elevated portion of the Orange Line's North Station (i.e., on land east of Washington Street and on either side of Commercial Street). The coal tar material found on Lot 42 is believed to originate from excavate for support structures for the North Station or for construction of the underground portion of the Orange Line near North Station. Based on a review of Historic Atlases for the period 1874 to 1938, portion of the North Station property, is constructed on filled land, within which coal gasification waste may have been placed. Based on *The Boston Consolidated Gas Company: Its Relation to the Public, Its Employees and Investors* (1907), coal gasification operations occurred near Commercial Street and Washington Street during the period 1829 to at least 1907 (https://archive.org/stream/jstor-1010602/1010602_djvu.txt). The coal gasification operations were operated by the Boston Gas Light Company from 1829 to approximately 1901. Sometime between 1901 and 1905, following the merger of several gas companies, coal gasification operations were operated by Boston Consolidated Gas Co. at this location. The 1874 and 1890 Historic Atlases showed the Boston Gas Light Company operating on both sides of Commercial Street, east of Washington Street. The wharfs, located between the coal gasification facility and the property eventually developed as North Station, were used for coal storage. In the 1908 and 1917 Historic Atlases, the Boston Consolidated Gas Co. was shown located south of Commercial Street, but the wharf area was in the processed of being filled. In 1928, Boston Consolidated Gas Co. occupied a small piece of the land south of Commercial Street, and by 1938 this small piece of land was occupied by a playground. For the Lot 42 EP3A exposure point, the location of the

coal tar contamination was evident based on visual examination. These coal tar-contaminated soils were excavated and transported off-site for treatment and disposal. Soils containing elevated levels of PAHs were excavated and placed more than 15 feet below final grade. Confirmatory soil sampling was used to identify residual PAH concentrations following remedial excavation. The coal tar-contaminated soils and soils containing elevated PAHs are considered not consistent with Anthropogenic Background. The residual levels of PAH detected are likely associated with coal ash and were consistent with the remainder of the exposure points that consistent with Anthropogenic Background. For soils remaining in this exposure point after remedial excavation, the identified metals are considered consistent with Anthropogenic Background.

5. Lot 42 EP 3C: Elevated levels of PAHs were detected in this exposure point. A catch basin existed in this area, which received storm water from Pacella Park Drive and transmitted it via a concrete pipe to a discharge point near the wetlands to the Blue Hill River. The PAHs are believed to originate from the road run-off seeping into soils from an open joint in the pipe. The source of the PAHs is petroleum residues that are incidental to the normal operation of motor vehicles, which is consistent with an Anthropogenic Background condition. However, to be conservative, the soils with elevated levels of PAHs were excavated and placed more than 15 feet below final grade. Confirmatory soil sampling was used to identify residual PAH concentrations following remedial excavation. The residual levels are likely associated with coal ash and were consistent with the remainder of the exposure points that are consistent with Anthropogenic Background. For soils remaining in this exposure point after remedial excavation, the identified metals are considered consistent with Anthropogenic Background.

The following OHM were considered to be consistent with Anthropogenic Background concentrations in the following exposure points, based on the information available when the Phase I Report was completed. Subsequently, during the RAMs, isolated pockets of contaminated soils were discovered within some of these areas, and each pocket of contaminated soil was remediated as part of the Remediation RAM or Construction RAM, until No Significant Risk of harm and/or Anthropogenic Background conditions were met.

Exposure Point	OHM Consistent with Anthropogenic Background
Lot 37 EP2	As, Sb, Be, Cr, Pb, Zn (note a)
Lot 42 EP1B	As, Be, Pb, Cd, Cr, Hg, Ni, Zn, PAHs (note b)
Lot 42 EP2A	As, Be, Cd, Cr, Pb, Hg, Ni, Zn (note c)
Lot 42 EP3A (residual soils)	As, Cd, Cr, Pb, Hg, Zn (note d)
Lot 42 EP3B	As, Sb, Cd, Cr, Pb, Hg, Zn (note c)
Lot 42 EP3C (residual soils)	As, Cd, Cr, Pb, Hg, Zn (note e)

As = Arsenic; Sb = Antimony; Be = Beryllium; Cd = Cadmium; Cr = Chromium; Hg = Mercury; Pb = Lead; Ni = Nickel; Zn = Zinc; and PAHs = Polycyclic Aromatic Hydrocarbons

Notes: a. These soils contained substantial amounts of coal ash. These soils contained some PAHs at levels greater than MassDEP's background for soils associated with fill containing coal ash or wood ash. In 2004, VHB conducted coal ash determination investigations on three soil samples collected from the fill on Lot 37. These soil samples were determined to contain particles consistent with asphalt, coal tar, anthracite coal, bituminous coal and/or coal ash, which is consistent with the historic fill origin of the soils. They do not indicate the presence of a historic petroleum release. Although these soils, which were placed prior to 1983, contain PAHs likely associated with the presence of coal ash, the PAHs were conservatively retained as contaminants of concern in the risk characterization. Therefore, PAHs were not assumed consistent with Anthropogenic Background at this exposure point.

b. Coal ash observed in soils. All PAHs were present at levels consistent with MassDEP's soils associated with fill containing coal ash or wood ash. PAHs were assumed consistent with Anthropogenic Background at this exposure point.

c. Substantial amounts of coal ash observed in fill at this location. Presence of PAHs is likely attributable to coal ash or wood ash in fill. The levels of PAHs were slightly above MassDEP's background concentrations for soils associated with fill containing coal ash or wood ash. To be conservative, the PAHs were retained as contaminants of concern in the Risk Characterization for this exposure point. Therefore, for the purpose of this Permanent Solution, the PAHs were not assumed to be consistent with Anthropogenic Background.

d. These coal tar-contaminated soils were excavated and transported off-site for treatment and disposal. Soils containing elevated levels of PAHs were excavated and placed more than 15 feet below final grade. For this exposure point, the location of the coal tar contamination was evident. Confirmatory soil sampling was used to identify residual PAH concentrations following remedial excavation. For the remaining soils, the identified metals are considered consistent with Anthropogenic Background.

e. These soils contained elevated levels of PAHs. Not all soils had to be excavated from this exposure point as part of Remedial RAM. Confirmatory soil sampling was used to identify residual PAH concentrations following remedial excavation. The identified metals are considered consistent with Anthropogenic Background for soils remaining in this exposure point after remedial excavation.

For the risk characterization, receptors included: future on-site residents; on-site construction workers; on-site utility workers; and consumers of municipal water (for the portion of the property located in a Zone A of a tributary serving a public drinking water reservoir). Although on-site commercial / industrial workers may exist on-Site in the future, risk estimates were not calculated for these receptors because they are adequately covered by on-site residents who are the more sensitive receptor.

Based on the results of the baseline Method 3 Risk Characterization, a condition of No Significant Risk of harm to safety, welfare and the environment was found to exist for current and future conditions. However, there was a concern that the development of the property could impact the wetland, which might result in a Significant Risk of harm to the environment. Therefore, the

Remediation and Construction RAMs contained provisions (e.g., control of storm water / sediment erosion during and after construction) to minimize the future potential impact to the wetlands.

A condition of No Significant Risk of harm to human health was found to exist for all receptors at the following exposure points:

1. Lot 37 EP2
2. Lot 42 EP1A – note *
3. Lot 42 EP1B
4. Lot 42 EP2A
5. Lot 42 EP3B
6. All wellheads within the Zone A of the subject property – note **

Notes:* Even though No Significant Risk of harm to human health was determined to exist for soils of Lot 42 EP1A, this exposure point had PCB levels in soils >1 mg/kg; therefore, a decision was made to include this exposure point in remedial efforts.

** No Significant Risk of harm exists for consumers of water within the Zone A on the subject property. In addition, no groundwater exposure point exceeded an applicable Massachusetts Maximum Contaminant Level (drinking water standards), as documented on Table 7 of Appendix A of the Phase I Report.

A condition of Significant Risk of harm to human health was found to exist for one or more receptors at the following exposure points:

1. Lot 37 EP1: on-site residents, construction and utility workers
2. Lot 42 EP2B: on-site residents, construction and utility workers
3. Lot 42 EP3A: on-site residents
4. Lot 42 EP3B: on-site residents

The cancer and non-cancer risk estimates are summarized on Tables 6.1 and 6.2 of Appendix A of the Phase I Report. No Significant Risk of harm exists for five out of the nine exposure points; however, a decision was made to remediate the PCB-contaminated soils of Lot 42 EP1A. A Significant Risk of harm to human health was determined to exist for the final four exposure points, and these exposure points were determined to require remediation. A summary of the maximum risk estimates for each receptor at each exposure point targeted for remediation is provided below.

Exposure Point	On-Site Residents	On-Site Residents	Construction/Utility Workers	Construction/Utility Workers
	Cancer Risk	Non-cancer Risk	Cancer Risk	Non-cancer Risk
Lot 37 EP1	**1.3E-4**	**9.4**	1.6E-6	**1.4**
Lot 42 EP1A	4.0E-6	0.72	1.0E-7	0.18
Lot 42 EP2B	**1.6E-5**	**9.0**	2.7E-7	**1.9**
Lot 42 EP3A (note)	**3.7E-4**	**3.1**	7.0E-6	0.32
Lot 42 EP3B	**4.4E-5**	0.017	6.3E-7	0.0046
MCP Risk Limit	1E-5	1	1E-5	1

Bold = Risk estimate exceeds MCP risk limit; therefore, Significant Risk of harm exists.

Note: Volatile PAHs and EPH constituents were present; however, risks from exposure to vapors in utility trenches or construction excavations or from vapor intrusion into a future residence were not determined, because these soils required remediation and off-site disposition.

3.2 Post-Remedial Risk Characterization Findings

As each phase of the Remediation RAM or Construction RAM was completed, risk characterizations were completed and provided in the next RAM Status Report or RAM Completion Report. During progress of the site-wide excavation under the Construction RAM, discrete, isolated pockets of suspect contamination were detected. If subsequent investigation determined the area required remediation, the soils were excavated and either transported off-site for disposition or placed on-site more than 15 feet below final grade. A summary of each exposure point or RGP (Residences of Great Pond) suspect-contaminated area is provided below, and includes a description of each area, the resolution (remediated or remediation not required), and the location of the associated risk assessment. The summary tables of confirmatory soil data and figures showing confirmatory soil sample locations are provided in the cited RAM reports.

Exposure Point or Discrete Area	**Description / Location**	**Resolution**	**Location of Final Results and Risk Assessment**
Lot 37 EP1	Lead-contaminated soils	Treatment to reduce TCLP lead and excavation; excavation proceeded until confirmatory lead levels were consistent with Anthropogenic Background; no risk assessment needed for confirmatory soil samples	Remediation RAM CR: Sections 3.1.1 and 4.1 Construction RAM CR: Section 4.1
Lot 42 EP1A	PCB-contaminated soils	Excavation until PCB levels were non-detect or less than 1 mg/kg or until natural soils are encountered; NSR	Construction RAM CR: Section 3.1.9

		existed based on original risk assessment; no new risk assessment needed.	
Lot 42 EP2B	Lead-contaminated soils	Treatment to reduce TCLP lead and excavation; excavation proceeded until confirmatory lead levels were consistent with Anthropogenic Background; no risk assessment needed for confirmatory soil samples	Remediation RAM CR: Sections 3.1.2 and 4.2 Construction RAM CR: Section 4.3
Lot 42 EP3A (RGP-7)	Coal tar contaminated area	Excavation, then risk assessment for confirmatory soil samples	Remediation RAM CR: Sections 3.1.3 and 4.3 and Appendix B Construction RAM CR: Section 4.13
Lot 42 EP3C	PAH-contaminated area	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #2: Appendix C Construction RAM CR: Section 4.5
RGP-1	Ash and petroleum contaminated area / Lot 42 EP3B	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #1: Appendix D Construction RAM CR: Section 4.6
RGP-2	Dark, odorous soils (putrid smelling) / Lot 37 EP2	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #1: Appendix E Construction RAM CR: Section 4.7
RGP-8	Suspect gasoline-contaminated soils / Lot 37 EP2	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #1: Appendix G Construction RAM CR: Section4.14
RGP-9	Clay-like soils with linseed oil or lubricating oil type odor / Lot 42 EP3B	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #1: Appendix H Construction RAM CR: Section 4.15
RGP-345 (also RGP-3, 4, 5, 6 and 3456)	Coal tar contaminated area / Lot 42 EP3A and 3B	Excavation, then risk assessment for confirmatory soil samples	Remediation RAM CR: Sections 3.2.1 to 3.2.4 and Appendix C Construction RAM CR: Section 4.11 (also Sections 4.8, 4.9, 4.10, 4.12 and 4.16)

RGP-10	Coal tar contaminated area / Lot 42 EP3B	Excavation, then risk assessment for confirmatory soil samples	Remediation RAM CR: Section 3.2.1 and Appendix D Construction RAM CR: Section 4.17
RGP-11	Marine clay-like soils with hydrogen sulfide odor / Lot 42 EP3B	Assessment, then risk assessment (no remedial excavation)	Construction RAM SR #2: Section 5.13 and Appendix F
RGP-12	Clay-like soils with small amounts of coal tar-like material / Lot 42 EP2A	Excavation, then risk assessment for confirmatory soil samples	Construction RAM SR #2: Section 5.14 and Appendix G
RGP-13	Marine clay-like soils with hydrogen sulfide odor / Lot 42 EP2A	Appearance of soils and OHM levels very like RGP-11 (no remedial excavation); no separate risk assessment needed	Construction RAM SR #2: Section 5.15

Note: CR = Completion Report; SR = Status Report; NSR = No Significant Risk

The excavated soils were either transported off-site for treatment and/or disposal or were placed in soil repositories. With one exception (i.e., Lot 42 EP1A), all soil repositories are entirely located at depths more than 15 feet below final grade and are also located either beneath a building foundation or a paved parking area. Risk assessments were not needed for these soils because they are considered isolated and inaccessible to human contact. For the exception, i.e., Lot 42 EP1A, the soil repository is located more than 14 feet below final grade and is also located beneath a building foundation. The baseline risk assessment for Lot 42 EP1A found No Significant Risk of harm to human health; therefore, the depth of this repository did not have to be more than 15 feet below final grade. By moving most of the PCB-contaminated soils to depths more than 14 feet below grade, those PCB-contaminated soils potentially accessible to humans have been greatly reduced, and would further reduce the risk estimates. Soils containing PCBs less than 1 mg/kg are located beneath the Building 1, 2 and 3 footprints; however, these PCB levels are too low to result in Significant Risk of harm.

Where needed, risk assessments were conducted for confirmatory soils samples following excavation, or were conducted for suspect-contaminated areas (RGP areas) to determine whether further excavation was required (the risk assessment results determined that remedial excavation was not required for RGP-11 and RGP-13). The areas of remedial excavation are depicted on Figure 4D. The figures showing confirmatory soil sampling locations and summary tables of confirmatory analytical data are provided in the Construction RAM Completion Report. The final risk estimates for each exposure point and discrete area, where final risk assessments were required, are provided below.

Lot 42 EP3A (RGP-7)
Post-excavation of coal tar-contaminated soils and elevated PAH-contaminated soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	8.8E-6	1E-5	No
Non-cancer: Subchronic	0.36	1	No
Non-cancer: Chronic	0.22	1	No

Lot 42 EP3C
Post-excavation of elevated PAH-contaminated soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	4.9E-6	1E-5	No
Non-cancer: Subchronic	0.50	1	No
Non-cancer: Chronic	0.25	1	No

RGP-1
Post-excavation of soils containing ash and petroleum (burnt)

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	8.4E-6	1E-5	No
Non-cancer: Subchronic	0.43	1	No
Non-cancer: Chronic	0.25	1	No

RGP-2
Post-excavation of dark, odorous (pungent) soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	1.0E-6	1E-5	No
Non-cancer: Subchronic	0.21	1	No
Non-cancer: Chronic	0.11	1	No

RGP-345
Post-excavation of coal tar-contaminated soils and elevated PAH-contaminated soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	4.0E-6	1E-5	No
Non-cancer: Subchronic	0.51	1	No
Non-cancer: Chronic	0.25	1	No

RGP-8
Post-excavation of suspect gasoline-contaminated soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	2.8E-6	1E-5	No
Non-cancer: Subchronic	0.073	1	No
Non-cancer: Chronic	0.046	1	No

RGP-9
Post-excavation of clay like soils with linseed oil or lubricating oil-type odor

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	3.2E-6	1E-5	No
Non-cancer: Subchronic	0.56	1	No
Non-cancer: Chronic	0.31	1	No

RGP-10
Post-excavation of coal tar-contaminated soils and elevated PAH-contaminated soils

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	7.7E-6	1E-5	No
Non-cancer: Subchronic	0.35	1	No
Non-cancer: Chronic	0.21	1	No

RGP-11
Assessment only: Marine clay-like soils with hydrogen sulfide odor

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	8.6E-6	1E-5	No
Non-cancer: Subchronic	0.21	1	No
Non-cancer: Chronic	0.21	1	No

RGP-12
Post-excavation of clay-like soils containing small amount of coal tar

Risk Type	Risk Estimate	MCP Risk Limit	Significant Risk?
Cancer	6.6E-6	1E-5	No
Non-cancer: Subchronic	0.38	1	No
Non-cancer: Chronic	0.18	1	No

The baseline risk characterization determined that No Significant Risk of harm to safety, the environment and welfare for Lot 37 and Lot 42 existed under current and future conditions. It also found that No Significant Risk of harm to human health existed under current and future conditions for the following locations for Lot 37 EP2, Lot 42 EP1B, Lot 42 EP2A and Lot 42 EP3B.

The Remediation RAM addressed the contaminated soils of Lot 37 EP1 (treatment-phase only), Lot 42 EP 2B (treatment-phase only) and Lot 42 EP3A. The Construction RAM addressed the contaminated soils of Lot 37 EP1 (placement of treated soils), Lot 42 EP1A, Lot 42 EP2B (placement of treated soils) and Lot 42 EP3C. During the Remediation and Construction RAMs, approximately 200,000 cubic yards of material was excavated from the filled land of Lots 37 and 42. This total includes both remedial soils and soils that could be re-used on-site without limitation. During excavation, the soils were continually inspected by personnel under the oversight of a Licensed Site Professional. If evidence of potential contamination was found, the soils of the suspect contaminated area were handled separately under a modification to one of the RAMs.

Following completion of the Remediation and Construction RAM Plans, No Significant Risk of harm to human health was achieved for both current and future conditions for Lot 37 EP1, Lot 42 EP1A, Lot 42 EP2B, Lot 42 EP3A (RGP-7) and Lot 42 EP3C. During the Construction and Remediation RAMs, the coal tar contamination was found to be more widespread than originally anticipated. Following completion of excavation of coal tar and associated PAH-contaminated soils

at RGP-3, RGP-4, RGP-5, RGP-6, RGP-345, RGP-3456, RGP-10 and RGP-12, No Significant Risk of harm to human health was achieved for current and future conditions.

During the Construction RAM, other discrete areas of suspect contamination were identified and investigated. Based on the results of the investigation and risk assessment for RGP-11 and RGP-13, No Significant Risk of harm to human health was determined to exist without the need for remedial excavation. For RGP-1, RGP-2, RGP-8 and RGP-9, the risk assessment found No Significant Risk of harm to human health had been achieved following remedial excavation.

Based on the outcomes of the baseline risk characterization and subsequent risk assessments, No Significant Risk of harm to health, safety, welfare and the environment has been achieved for RTN 4-3023897 (Lot 37) and RTN 4-25464 (Lot 42). This finding is based on the following assumptions: (1) non-commercial gardening of edible produce in a residential setting will be managed under Best Management Practices; and (2) concentrations of certain OHM in specific areas of the Site are consistent with Anthropogenic Background concentrations. Except for soils from Lot 42 EP1A, all contaminated soils were placed in on-site repositories located more than 15 feet below grade. For Lot 42 EP1A, the soils containing more than 1 mg/kg PCBs were placed in a repository more than 14 feet below final grade; however, No Significant Risk of harm existed for these soils before their excavation. Based on the foregoing, no Notice of Activity and Use Limitation is required to make the findings of the risk characterization / risk assessments valid. The location of the soil repositories beneath building foundations and paved parking lots will help ensure the final grades remain unchanged and also serve as a further impediment to future human exposure.

4.0 UPDATED CONCEPTUAL SITE MODEL

The original Conceptual Site Model was provided in Section 12.0 of the Phase I Report. It reflected conditions prior to the implementation of the Remediation and Construction RAMs and the development of the property as a residential apartment complex. Provided below is the updated Conceptual Site Model for RTN 4-302897 (Lot 37) and RTN 4-25464 (Lot 42), which reflects current Site conditions.

1. The subject property is comprised of three lots, identified as Lots 37, 42 and 44, and addressed as 5 Pacella Park Drive, Randolph, Norfolk County, Massachusetts. Most of Lots 37 and 42 are filled land and, until recently, were undeveloped; the northern portions of these lots are occupied by wetlands associated with the Blue Hill River. Most of these two lots were historically low-lying land and were filled with bedrock debris from the development of Great Pond Commerce Center, and with demolition debris and urban soils from the development of the Orange Line (part of the MBTA subway system) and demolition of a Roxbury mill.

2. The 5 Pacella Park Drive property is currently owned by Great Pond Residential LLC, c/o The Dolben Company, Inc. of Woburn, Massachusetts. Lot 37 is approximately 4.47 acres and is located on the east side of the subject property. Lot 42 is approximately 8.9 acres and is located on the west side of the subject property. Lot 44 is approximately 0.959 acres and is located south of Lot 37. Recently, Great Pond Residential LLC developed the subject property into a residential apartment complex, with five apartment buildings, a club house, a swimming pool and paved parking areas.

3. The Blue Hill River is a Class A tributary to the Great Pond Reservoir, serving the Towns of Braintree, Randolph and Holbrook. Large portions of Lots 37 and 42 are located within the Zone A to the Blue Hill River. The Blue Hill River is located on the north side of the two lots, and its elevation is more than 20 feet below the top of the upland, filled portions of Lots 37 and 42. In the upland area, the depth to groundwater is between 19 and 28 feet below ground. Based on the October 2014 gauging round, the direction of groundwater flow is east-southeast, parallel to the Blue Hill River and toward the Great Pond Reservoir.

4. The historic fill, located on Lots 37 and 42, was comprised of urban soils plus the following materials: concrete slabs and other concrete materials, granite blocks and slabs, large boulders, blasted bedrock material, bricks, asphalt, metal pipes, plastic pipes, wire, steel rebar, chain-link fencing, lumber, tree limbs and stumps, glass, coal pieces and coal ash, wood ash, charred wood, railroad ties, torn poly sheeting, plastics, porcelain / ceramics, sheet metal, roofing materials, chain link fencing and tire pieces. This material reportedly originated from materials removed during the construction of the Orange Line and demolition material, such as from a Roxbury textile mill. Also, the blasted bedrock material originated during the development of the Great Pond Commerce Park. Based on available Site history, this material was placed prior to the effective date of M.G.L. c. 21e and the MCP (i.e., prior to 1983), and conditions in areas of the property and / or for specific oils or hazardous materials may meet MCP's definition of Historic Fill and Anthropogenic Background.

5. Filling work began in the early 1970's, initially with Lot 37 based on a 1971 aerial photograph. At that time, no filling had occurred on the west side of the end of the roadway (i.e., Lot 42). The fill placed on the east side is likely to have been from the teardown of an old mill in Roxbury, Massachusetts as described in several site assessment reports done previously on the parcel for due diligence purposes. Test pitting done in December 2011 and August 2014 and subsequent excavation of this area during 2015 and 2016 support this determination. Much of the interior of Lot 37 was found to have large granite architectural pieces, granite curbing and other building materials. The Orange Line fill material was likely placed on Lot 42. Test pits and subsequent excavation done within Lot 42 indicate the presence of construction demolition

debris consistent with the elevated railway materials and also ballast stone consistent with railroad lines at grade. They also were consistent with the electrical nature of the subway system. The debris also included large concrete columns with electrical conduit embedded within them, likely light fixtures that illuminated the elevated stations, railroads ties and creosote, pieces of third rail and metal electrical boxes, for example. An April 1978 aerial photograph shows the fill distributed throughout Lots 37 and 42.

6. On the south and west sides of Lot 42, east side of Lot 37 and within Lot 44, there is little to no fill. Top soil is underlain by natural soils (sand or till) and / or bedrock. Between these locations, historic urban fill ranged in depth from 5 feet to more than 30 feet below grade. The thickest fill was located in the northern portion of Lots 37 and 42, especially near the common lot line. Underlying the historic urban fill in this area are organic silts and peats, and likely reflect the historic location of a wetland or stream. The organic silts and peats are located approximately 27 to 35 feet below grade, depending on location, and are underlain by sands, gravel and silts. To the west and east, the historic urban fill is underlain by natural soils (sands or till) or bedrock.

7. During 2011 to 2014, the Dolben Company, Inc., at that time as a potential buyer of these three lots, conducted significant investigations, because of plans to develop the lots as a residential apartment complex. Because of the fill history of the property and MCP regulatory history of Lot 37 (described below in bullet 8), the investigations entailed test pitting, test borings, soil sampling and analysis, piezometer and monitoring well installation, redevelopment of old monitoring wells, monitoring well/piezometer gauging, and groundwater sampling and analysis. The investigations and assessments, including risk characterization, are documented in GEC's *Supporting Information Report*, which is a provided as Appendix A. This *Supporting Information Report* provided most of the information and evaluation needed to meet the requirements of a Phase I Initial Site Investigation, specified in 310 CMR 40.0480. The information provided in the *Phase I Initial Site Investigation, Conceptual Phase II Scope of Work and Tier Classification Submittal*, including Appendix A, provide the full information needed for the Phase I Initial Site Investigation.

8. MCP response actions were conducted on Lot 37 prior to The Dolben Company, Inc.'s and GEC's involvement in the Site. On May 21, 2004, the presence of lead, certain PAHs and EPH subset(s) in soils of Lot 37 at levels exceeding soil Reportable Concentrations was reported to MassDEP and assigned RTN 3-23897. The RTN was later changed to RTN 4-3023897, when the town of Randolph was reassigned from the Northeast Region of MassDEP to the Southeast Region. A Notice of AUL was registered for a portion of Lot 37 and a Class B-2 RAO Statement was submitted for RTN 3-23897 in 2004. On December 23, 2014, the AUL was

terminated and the Class B-2 RAO was retracted, because the lead contamination was found to extend beyond the boundaries of the AUL area of Lot 37 and because the proposed future use of the property is not consistent with the terms of the AUL.

9. The upland portion of Lot 37 is the location of the 3.2-acre disposal site assigned RTN 4-3023897. Based on the results of the investigations and risk characterization, documented in Appendix A of the Phase I Report, the RTN 4-3023897 disposal site was divided into two exposure points: Lot 37 EP1, where elevated levels of lead and other metals were detected in soils, and Lot 37 EP2, which had lower levels of metals. Other OHM detected in the soils of RTN 4-3023897 included mostly EPH and PAHs. The entire disposal site for RTN 4-3023897 is located on the upland portion of Lot 37. As documented in the Phase I Report, No Significant Risk of harm was found to exist for Lot 37 EP2, including for residents. Remediation was determined to be required for Lot 37 EP1 before the property could be used as a residential apartment complex for the following reasons:

   a. Lot 37 EP1: The soils of Lot 37 EP1 were found to constitute a Significant Risk of harm to residents, construction workers and utility workers. In addition, the soils of Lot 37 EP1 were found to contain leachable levels of lead, above the RCRA TCLP lead criterion of 5 mg/l.

10. On January 30, 2015, based on the results of the pre-development investigations, the presence of lead, nickel, vanadium, PCBs, benzene, naphthalene, phenanthrene, fourteen other PAHs and two EPH subsets in soils of Lot 42 at levels exceeding soil Reportable Concentrations was reported to MassDEP and assigned RTN 4-25464. The entire disposal site for RTN 4-25464 is located on the upland portion of Lot 42 and encompasses an area of approximately 7.2 acres. Based on the results of the investigations and risk characterization, documented in Appendix A of the Phase I Report, the RTN 4-25464 disposal site was divided into seven exposure points: (1) Lot 42 EP1A, where elevated levels of PCBs were detected in soils; (2) Lot 42 EP2B, where elevated levels of lead were detected in soils; (3) Lot 42 EP 3A, where elevated levels of PAHs, benzene and EPH, associated with coal tar, were detected in soils; (4) Lot 42 EP3C, where elevated levels of PAHs were detected in soils; and (5) Lot 42 EP1B, Lot 42 EP2A and Lot 42 EP3B, where low levels of OHM were detected in soils.

11. As documented in the Phase I Report, the soils of Lot 42 EP1B, Lot 42 EP2A and Lot 42 EP3B were found to constitute No Significant Risk of harm to residents, construction workers and utility workers. For the remaining four exposure points, remediation was determined to be required before the property could be used as a residential apartment complex, for the following reasons:

a. Lot 42 EP 1A: No Significant Risk of harm was also determined to exist for Lot 42 EP1A; however, because of the presence of PCBs at levels greater than 1 mg/kg but less than 10 mg/kg, a decision was made to remediate these soils. The remedial goal was to place the soils containing >1 mg/kg PCBs as deep as possible, beneath the future Building 1 footprint. TSCA was determined not to apply to the PCB-contaminated soils, because: (1) the PCB-contaminated soils were emplaced prior to the effective date of TSCA; and (2) no soil sample contained 10 mg/kg PCBs or more. The source of the PCBs is likely the ballast stone located in this area, which were likely formerly located along a rail road track.

b. Lot 42 EP2B: A Significant Risk of harm was determined to exist to residents and to utility / construction workers. Soils of Lot 42 EP 2B contained elevated levels of lead as well as leachable levels of lead, above the RCRA TCLP lead criterion of 5 mg/l. Within Lot 42 EP2B, orange- and green-painted concrete and brick was evident as well as a whitish layer associated with the brick. The highest levels of lead were detected where these materials were found.

c. Lot 42 EP3A: A Significant Risk of harm was determined to exist to residents and potentially to utility / construction workers. Soils of Lot 42 EP 3A contained visual evidence of coal tar as well as elevated levels of EPH and PAHs associated with the coal tar. The coal tar is believed to originate from contaminated fill excavated during the Orange Line construction at or near North Station, near a former coal gasification facility located on both sides of Commercial Street, near Washington Street, in Boston.

d. Lot 42 EP3C: A Significant Risk of harm was determined to exist to residents. Soils of Lot 42 EP 3C contained elevated levels of PAHs, likely attributable to Pacella Park Drive storm water, from a leaking joint in a storm water line, located in this area. Although this condition is consistent with Anthropogenic Background, a decision was made to place these soils as deep as possible to minimize potential risk to future residents.

12. Concurrent with the development of the apartment complex, two Release Abatement Measures (RAM) were conducted, one called the Remediation RAM and the other called the Construction RAM. Both RAMs included remediation of contaminated soils; however, the Construction RAM also included activities to allow construction of the apartment complex within active disposal sites. During implementation of the RAMs, the soils were inspected continuously under the direction of a Licensed Site Professional, and other isolated pockets of suspect contamination were discovered on Lots 37 and 42. These isolated pockets were identified as RGP-1 to RGP-6, RGP-8 to RGP-13, RGP-345 and RGP-3456. Based on follow-up investigations, most of these isolated areas of contamination were determined to be attributable to coal tar or to evidence of historic burning activities using petroleum as an

accelerant. Except for RGP-11 and RGP-13, these isolated areas of contamination were remediated. RGP-11 and RGP-13 were comprised of marine clay and were found not to have significant contamination.

13. Combined, the two RAMs resulted in the following:

    a. The excavation of approximately 207,900 cubic yards of fill material from across Lots 37 and 42. Approximately 41,700 and 166,200 cubic yards of fill material were excavated from Lot 37 and Lot 42, respectively. Of this material approximately 73,000 cubic yards consisted of solid materials, such as boulders/rocks, concrete, brick, asphalt, rebar, railroad ties and rails, tires and other debris. The rocks/boulders, unpainted/unstained concrete and unpainted/unstained brick were re-used on-Site, either by crushing and using to increase the structural strength of the soils or as rip rap along the embankment of the retention basins/drainage swale and the slope leading to the Blue Hill River. Asphalt was also re-used on-Site. It was crushed and used as base material beneath the paved parking lot for Building 4. Other solid materials were either shipped off-site for recycling (e.g., metals) or disposal.

    b. Of the approximately 134,900 cubic yards of soils, approximately 5,800 cubic yards of contaminated soils were placed in on-Site soil repositories (under the Construction RAM), approximately 7,100 cubic yards of <1 mg/kg PCB-contaminated soils were reused beneath the footprints of Buildings 1, 2 and 3 located on Lot 42 (under the Construction RAM), and approximately 9,900 cubic yards of contaminated soils were transported off-site for treatment (mostly coal tar and coal tar-contaminated soils) or for re-use as daily landfill cover (mostly PAH-contaminated soils for which there was inadequate space to put in on-Site soil repositories) (mostly under the Remediation RAM). The soils placed in repositories originated from the following locations:

        i. Lot 37 EP1 and Lot 42 EP2B: These soils contained elevated levels of lead and were treated, as needed under the Remediation RAM, to reduce its TCLP lead levels to below 5 mg/l (the RCRA TCLP lead criterion).

        ii. Lot 42 EP3C, RGP-1, RGP-3, RGP-6, RGP-3456 and RGP-9: These soils contained moderately elevated levels of PAHs, but little to no volatile PAHs.

        iii. Lot 42 EP1A: These soils contained PCBs at levels ranging up to 9.2 mg/kg, based on pre-excavation analytical data for 15 samples. During the excavation of these soils, PCBs were detected at levels ranging up to 4.79 mg/kg out of 205 samples analyzed.

    The lead- and PAH-contaminated soils were placed in soil repositories located more than 15 feet below final grade. These repositories are located beneath Building 4

(approximately 2,018 cubic yards) on Lot 37, the club house (approximately 2,099 cubic yards) on Lot 42, and the parking lot of Building 3 (approximately 566 cubic yards) on Lot 42. These soils were placed at depths such that there would be no exposure to residents, utility workers or construction workers under the MCP definition of soil exposure intervals for these receptors.

Approximately 8,200 cubic yards of PCB-contaminated soils (with a small amount containing coal ash) were excavated from Lot 42 EP1A. The soils containing between 1 and 5 mg/kg PCBs (approximately 1,100 cubic yards) were placed in a soil repository beneath Building 1 on Lot 42, located 14 feet or more below grade. The soils containing between 3 and 5 mg/kg PCBs or containing coal ash were placed at the bottom of the Building 1 repository, at depth intervals ranging from 18.5 to 20.5 feet below final grade.

c. For Lot 37 EP1 and Lot 42 EP2B, lead-contaminated soils were excavated until Anthropogenic Background concentration for lead was achieved. No post-remedial risk assessment was needed for these exposure points.

d. During the initial Risk Characterization, documented in the Phase I Initial Site Investigation, the exposure point concentrations for PCBs in this location were determined to be 1.4 mg/kg for the 0-3 foot interval and 2.5 mg/kg for the 0-6 and 0-15 foot intervals (based on the 95th percentile confidence limits on the mean). No Significant Risk of harm was determined to exist for Lot 42 EP1A for residents, utility workers and construction workers. A decision was made to place the PCB-contaminated soils as deep as possible to minimize future potential for PCB exposure and to be in approximate compliance with TSCA. Therefore, No Significant Risk of harm was determined to still exist for Lot 42 EP1A after moving the PCB-contaminated soils deeper. No separate post-remedial risk assessment was needed.

e. For Lot 42 EP3A (RGP-7), Lot 42 EP3B, RGP-1, RGP-2, RGP-345 (includes RGP-3, RGP-4, RGP-5, RGP-6 and RGP-3456), RGP-8, RGP-9, RGP-10 and RGP-12, post-remedial risk assessments found No Significant Risk of harm to human health had been achieved.

f. Of the approximately 134,900 cubic yards of soils remaining after removing solid debris, approximately 9,900 cubic yards of especially contaminated soils were removed from the Site, approximately 5,800 cubic yards were placed in on-Site soil repositories (approximately 2,018 cubic yards in Lot 37 and approximately 3,765 cubic yards in Lot 42), and approximately 7,100 cubic yards were reused beneath building footprints (Buildings 1, 2 and 3 on Lot 42). The remaining approximately 112,100 cubic yards of soil were augmented using crushed rock or concrete to increase its structural strength

before re-using these soils on-Site. These soils originated from areas where the levels of OHM in the soils resulted in No Significant Risk of harm, and where certain metals and/or PAHs were present at concentrations consistent with Anthropogenic Background. Approximately 40,600 and 152,108 cubic yards of soils (augmented with crushed rock, concrete and brick) were reused on Lot 37 and Lot 42, respectively.

g. The Phase I Report found No Significant Risk of harm to the environment for both RTN 4-3023897 and RTN 4-25464. However, without proper controls, development of the property could result in run-off containing contaminated soils reaching the wetlands north of the disposal sites. Therefore, a sedimentation basin was constructed along the common lot line between Lots 37 and 42, to mitigate the potential impact to the wetlands. The fill material in this location was completely removed until natural soils were encountered. Therefore, at this location, remediation was conducted until background conditions were achieved. At the end of construction, this sedimentation basin was constructed into a new wetland, as depicted on Figures 3D and 3E.

h. A storm drain system, which includes two rain gardens, was installed on the property to handle storm water flow across the property, as depicted on Figure 3D. The presence of the storm drain system, pavement and building foundations on the property will help mitigate the future potential for impacts from run-off on the wetlands.

i. The building foundations and / or pavement over the soil repositories help to maintain the final elevation of the ground surface and to further mitigate the potential for future human contact to the soils in the repositories.

14. A Zone A to a tributary of a drinking water reservoir is located on both Lots 37 and 42. Therefore, exposure to groundwater within the Zone A was evaluated during the Phase I Method 3 Risk Characterization. No Significant Risk of harm was determined to exist for a future consumer of this water, and no groundwater exposure point concentration exceeded an applicable or suitably analogous standard (i.e., the Massachusetts Maximum Contaminant Levels).

15. In the Phase I Report, no significant migration pathways for impact to groundwater or surface water were identified. The lead contamination, although leachable, had not significantly impacted groundwater, and the coal-tar related contamination had not significantly migrated to groundwater. The treatment of the lead-contaminated soils reduced the leachable lead levels to less than RCRA's TCLP lead criterion of 5 mg/l. Except for the coal tar, no significant source of vapor to indoor air of a future building existed. The coal tar contamination was excavated and transported off-site for treatment then disposal. Therefore, the coal tar

contamination is no longer a potential source of vapor to indoor air or of contaminated groundwater.

16. Based on the outcomes of the baseline risk characterization and subsequent post-remedial risk assessments, No Significant Risk of harm to health, safety, welfare and the environment has been achieved for RTN 4-3023897 (Lot 37) and RTN 4-25464 (Lot 42). This finding is based on certain assumptions identified in bullet 17, below. Except for soils from Lot 42 EP1A, the most contaminated soils were placed in on-site repositories located more than 15 feet below final grade. For Lot 42 EP1A, the soils containing more than 1 mg/kg PCBs were placed in a repository more than 14 feet below final grade; however, No Significant Risk of harm existed for these soils before their excavation. The location of the soil repositories beneath building foundations and paved parking lots will help ensure the final grades remain unchanged and also serve as a further impediment to future human exposure.

17. Subsequent to completion of the Remedial and Construction RAMs, Site conditions for the entirety of both RTN 4-3023897 (Lot 37) and 4-25464 (Lot 42) meet the requirements for a Permanent Solution with Conditions. The Conditions attached to both Permanent Solutions include the following: (1) background conditions for some hazardous materials are consistent with Anthropogenic Background from fill placed on-Site prior to 1983; and (2) gardening of edible produce is assumed controlled by Best Management Practices. No Notice of Activity and Use Limitation is required to maintain a condition of No Significant Risk of harm for either release tracking number.

5.0 REPRESENTATIVENESS EVALUATION AND DATA USABILITY ASSEESSMENT

A representativeness evaluation and data usability assessment were conducted to support a Permeant Solution, in accordance with 310 CMR 40.1056(2)(k) and consistent with MassDEP guidance, *MCP Representativeness Evaluations and Data Usability Assessments*, Policy WSC-07-350, dated September 19, 2007. This evaluation and assessment focuses on whether the available information supports the conclusions that: (1) disposal site conditions are adequately characterized; (2) risks to health, safety, public welfare and the environment have been adequately addressed (i.e., all Exposure Pathways have been identified, Exposure Point Concentrations meet the applicable cleanup requirements); and (3) all sources have been eliminated/or controlled to the extent required.

Provided herein is the representativeness evaluation and data usability assessment for the analytical data collected during the period December 2011 to February 2017. There were 183 laboratory reports generated during this period. Most of the analytical data were generated by Con-Test Analytical Laboratory (160 laboratory reports), with remainder by Spectrum Analytical (22 laboratory reports) and Test America (1 laboratory report). The laboratory reports upon which this

Permanent Solution Statement relies are provided in the previously submitted reports. Lists of the laboratory reports are provided in Appendix C, and are separated into five types: (1) 47 laboratory reports for lead remediation (Table C-1.1); (2) 38 laboratory reports for the RGPs (Table C-2.1); (3) 26 laboratory reports for PCB remediation (Table C-3.1); (4) 45 laboratory reports for the coal tar remediation (Table C-4.1); and (5) 27 laboratory reports used to support the Phase I Initial Site Investigation (Table C-5.1).

5.1 Representative Evaluation

According to MassDEP's policy: *The Representativeness Evaluation is an evaluation and demonstration of the adequacy of the spatial and temporal sets used to support the RAO* [Permanent or Temporary Solution]. …. *The Representativeness Evaluation determines whether the data set in total sufficiently characterizes conditions at the disposal site and supports a coherent Conceptual Site Model. The Representativeness Evaluation determines whether there is enough information from the right locations, both spatially and temporally, to support the RAO* [Permanent or Temporary Solution].

The policy identifies several different elements that must be considered when conducting a Representativeness Evaluation. The available data and information, relative to each of these elements, are evaluated below.

Use of Field/Screening Data

During excavation, field screening was conducted for both volatile total ionizable compounds (TICs) using a photoionization detector and for dust using dust monitors. The results of the field screening were used to determine if and when dust suppression activities should be conducted and if work stoppage or respirators were needed. Elevated PID readings were encountered only during excavation of coal tar and coal tar-contaminated soils.

Sampling Rationale

Prior to 2011 and GEC's involvement in the two lots, investigations were conducted on both Lot 37 (in 2004) and Lot 42 (in 1985, 1988, 1992 and 1993). The investigations conducted on Lot 37 were conducted by Vanesse Hangen Brustlin, Inc. (VHB), on behalf of the owner of Lot 37 at that time and by Roberts Consulting, Inc. (Roberts) on behalf of a prospective buyer. Due dilitence investigations were conducted by Roberts, which resulted in the discovery of lead and PAH contamination on Lot 37. Investigations conducted by VHB were intended to address the MCP issues and resulted in a Class B-2 Response Action Outcome and a Notice of Activity and Use Limitation. Investigations at Lot 42 were conducted by GZA GeoEnvironmental, Inc. (GZA), which were required

by the MassDEP (known as DEQE at that time) as a result of the discovery of a semi-solid asphaltic material in the soils.

In 2011, GEC began due diligence investigations at Lots 37 and 42 on behalf of a prospective buyer. Investigations conducted during the period 2011 to mid-2015 were intended to obtain sufficient data to design a remedial strategy for the Site and to determine if the Site could be developed into a residential apartment complex. Given the origin of the fill across the two lots, soil and groundwater samples were collected for analysis of VOCs, semi-volatile organic compounds (SVOCs), EPH and PAHs, VPH and target VOCs, PCBs, MA14 metals, RCRA 8 metals and/or individual metals. These investigations identified localized areas of contamination (Lot 37 EP1 and Lot 42 EP2B, which were areas of lead contamination; Lot 42 EP1A, where PCB contamination was located; Lot 42 EP3A, where coal tar was discovered; and Lot 42, EP3C, where elevated PAHs were detected in soils), which required additional investigation to determine the horizontal and vertical extent of contamination as well as whether the soil contamination had impacted the underlying groundwater contamination. The analytical data from the additional investigations were used to support a Method 3 Risk Characterization.

Based on the results of the investigations and risk characterization, a remedial strategy was developed entailing: (1) the excavation of the coal-tar contaminated soils for off-site disposition; (2) the treatment of lead-contaminated soils to reduce lead leachability and placement of the lead-contaminated soils in on-site repositories located 15 feet below final grade; (3) the excavation of PAH-contaminated soils and placement in the on-site repositories located 15 feet below final grade; (4) the excavation of PCB-contaminated soils and placement of the most contaminated soils at depth; and (5) observing all soils being excavated under the oversight of a LSP in case additional pockets of contaminated soils are encountered.

During the RAMs, frequent sidewall and bottom samples were collected for analysis of lead, EPH, PAHs and PCBs as relevant to confirm when sufficient excavation of the individual remedial areas had been accomplished. During disposal criteria testing of the coal tar contaminated material, low levels of pesticides were encountered. Therefore, during confirmatory sampling of the coal tar contaminated area was expanded to include pesticide analyses, and groundwater samples were collected from a downgradient monitoring well to determine whether pesticides had leached to groundwater.

During the RAM, when a new individual pocket of contamination was encountered, one or more soil samples were collected for analysis of disposal criteria, including SVOCs, VOCs, PCBs, MA14 metals and EPH and PAHs. At RGP-8, which was a pocket of suspect (based on odor) gasoline contamination, soil samples were also collected for analysis of VPH and target VOCs. Most suspect

pockets of contamination had to be excavated for placement in a repository or for off-site disposition. Required samples for sidewall and bottom confirmatory samples were selected based on the results of the initial investigations. Usually, the confirmatory analyses were EPH and PAHs or PAHs alone. For RGP-8, it also included VPH and target VOCs. In addition, a temporary monitoring well was installed in the excavation hole for RGP-8. A groundwater sample was collected for analysis of EPH and PAHs, PAHs only (low level detection) and for VPH and target VOCs.

Critical samples were identified as the following:

1. For Lot 37 EP1 and Lot 42 EP2B, the soil samples collected from the sidewalls and bottom of the excavations to determine when excavation of lead-contaminated soils was complete.
2. For coal tar contaminated areas, the soil samples collected from the sidewalls and bottom of the excavations for analysis of PAHs to determine when excavation of the soils was complete.
3. For Lot 42 EP1A, the soil samples collected from the sidewalls and bottom of the excavations for analysis via USEPA Method 8082A with Soxhlet extraction to determine when excavation of PCB-contaminated soils was complete.

Number, Spatial Distribution and Handling of Samples

Hundreds of soil samples were collected from Lots 37 and 42 over the period 2004 to 2017. Most of the soil samples were collected during test pitting or excavation, due to difficult drilling conditions. The presence of boulders, concrete, brick and other solid debris made boring / drilling difficult throughout the two lots. Test borings were advanced throughout the two properties, and soil samples were collected throughout the horizontal and vertical extent of the historic fill. In specific locations, where contamination was encountered (either before or during the two RAMs), a greater number of soil samples were collected in these areas of localized contamination.

Groundwater samples were collected from monitoring wells that were installed by others prior to 2004, as well as from two piezometers installed in wetlands abutting the Blue Hill River and a temporary monitoring well installed in RGP-8. Groundwater analytical data exists for the period 1985 to 2016.

All soil and groundwater samples collected by GEC during the periods 2011 to 2017 and 2014 to 2016, respectively, were collected in accordance with GEC's standard operating procedures. Because of the age of most monitoring wells, they were redeveloped prior to sampling. Groundwater samples collected for dissolved OHM analysis were field filtered using 0.45 micron filters prior to sample preservation.

The soil and groundwater analytical data used to support the Phase I Initial Site Investigation and original Method 3 Risk Characterization are summarized in Tables 1.1, 1.2 and 1.4 of the Phase I Initial Site Investigation Report. Both soil and ground water samples were analyzed for PCBs, EPH, PAHs, SVOCs, VOCs, VPH and metals. The numbers of each type of analysis are provided in the two tables below.

Soil Samples supporting Phase I Initial Site Investigation Report

Analytical Method	No. Soil Samples	Comment
PCBs: USEPA 8082, some with Soxhlet extraction	107	Lot 37: 5 samples (4 in 2004 by another); Lot 42: 91 samples
EPH and PAHs: MADEP-04-1.1	97	Lot 37: 40 samples (18 in 2004 by others); Lot 42: 57 samples
PAHs only: USEPA Method 8270D or 8270D	14	Lot 37: 6 samples (5 in 2004 by others); Lot 42: 8 samples
SVOCs: USEPA Method 8270C or 8270D	16	Lot 37: 2 samples; Lot 42: 14 samples
VOCs: USEPA Method 8260C	34	Lot 37: 5 samples; Lot 42: 29 samples
VPH and target VOCs: MADEP-04-1.1	4	Lot 42: 4 samples (mostly in suspect coal tar area)
MA14 Metals: USEPA Methods 6010C and 7471B	86	Lot 37: 40 samples (14 in 2004 by others); Lot 42: 46 samples
RCRA8 Metals	24	Lot 37: 6 samples (2 in 2004 by others); Lot 42: 18 samples
Lead only: USEPA Method 6010C	62	Lot 37: 31 samples (5 by others in 2004); Lot 42: 31 samples
Antimony only: USEPA Method 6010C	11	Lot 42: 11 samples
Vanadium only: USEPA Method 6010C	15	Lot 42: 15 samples

Note: Excludes samples collected for disposal criteria testing (other than those reflected above), including TCLP analyses.

All samples were collected by GEC during the period 2011 to 2014 unless otherwise stated in the table above.

Groundwater Samples supporting Phase I Initial Site Investigation Report

Analytical Method	No. Groundwater Samples	Comment
MA14 Metals (Total)	4	collected in 2014
MA 14 Metals (Dissolved)	6	2 samples collected in 2004; 4 collected in 2014
Priority Pollutant 13 Metals (Total)	3	collected in 1985 by others
RCRA 8 Metals (Total)	5	collected in 1988 by others
Antimony, Nickel, Vanadium and Zinc (Total)	5	collected in 2014 to 2015

Antimony, Nickel, Vanadium and Zinc (Dissolved)	5	collected in 2014 to 2015
Lead (Dissolved)	3	collected in 1993 by others
PCBs: USEPA Method 8082A	4	collected in 2014
VOCs: USEPA Method 8260B or 8260C	8	2 samples collected in 2004 by others; 6 collected in 2014
VOCs: USEPA Method 8240	4	collected in 1993 by others
VOCs: GZA Screen	5	collected in 1988 and 1992 by others
VPH and target VOCs: MADEP-04-1.1	4	collected in 2014
EPH and PAHs: MADEP-04-1.1	6	2 samples collected in 2004 by others; 4 collected in 2014
PAHs: USEPA Method 8270 (low level detection)	4	collected in 2014
SVOCs: USEPA Method 8270 or USEPA Method 625	9	collected during period 1985 to 1993 by others
SVOCs: GZA Screen	1	collected in 1992 by others

Note: Samples collected by GEC during 2014 and 2015 for dissolved analyses were field filtered using a 0.45 micron filter prior to sample preservation.

All samples collected during 2014 and 2015 were collected by GEC; all samples collected during the period 1985 to 2004 were collected by other consultants.

The analytical data generated during the Remediation and Construction RAMs are summarized in Tables 1.1 to 18 for soils and Tables 19.1 and 19.2 for groundwater of the Construction RAM Status Report #3 and Construction RAM Completion Report. Soil samples were analyzed for PCBs, pesticides, herbicides, EPH, PAHs, SVOCs, VOCs, VPH and metals. Groundwater samples were analyzed for pesticides, EPH, PAHs, SVOCs, VPH, target VOCs and metals. The numbers of each type of analysis are provided in the two tables below.

Soil Samples collected during Construction and Remediation RAMs

Analytical Method	No. Soil Samples	Comment
PCBs: USEPA 8082 with Soxhlet Extraction	205	Collected during remediation of Lot 42 EP1A – confirmatory sampling and to determine order of placement of soils in repository
PCBs: USEPA 8082	36	These samples were mostly collected for disposal criteria testing or where new area of suspect soil contamination located
EPH and PAHs: MADEP-04-1.1	135	Mostly collected from Lot 42 for sidewall confirmatory sampling or where new area of suspected contamination located
EPH only: MADEP-04-1.1	9	Collected from RGP-8

SVOCs: USEPA Method 8270D	22	Mostly collected for disposal criteria testing or where new area of suspect soil contamination located
PAHs only: USEPA Method 8270D	56	Mostly collected from Lot 42 for confirmatory sidewall sampling
VOCs: USEPA Method 8260C	40	Mostly collected for disposal criteria testing or where new suspect area of contamination located
VPH and target VOCs: MADEP-04-1.1	33	Mostly collected from coal tar contaminated area or where new suspect area of contamination located
Pesticides: USEPA Method 8081B	83	Mostly collected from coal tar impacted areas and/or for disposal criteria testing
Herbicides: USEPA Method	5	Collected for disposal criteria testing
MA14 Metals: USEPA Methods 6010C and 7471B	40	Mostly collected for disposal criteria testing or where new suspect area of contamination located
RCRA8 Metals	2	Collected for disposal criteria testing
Lead only: USEPA Method 6010C	108	Collected from Lots 37 EP1 and 42 EP2B (103 samples); and RGP-6 (5 samples)
Cadmium only: USEPA Method 6010C	6	Collected from RGP-9, where cadmium levels were detected at levels above background

Note: Excludes samples collected for other disposal criteria testing, including TCLP analyses, and those samples collected by the remediation contractors for analysis of total lead and TCLP lead during treatment of lead-contaminated soils.

All soils samples were collected during the period 2015 to 2017 by GEC.

Groundwater Samples collected during Construction and Remediation RAMs

Analytical Method	No. Groundwater Samples	Comment
EPH and PAHs: MADEP-04-1.1 (Total)	1	Collected from MW-RGP8
EPH and PAHs: MADEP-04-1.1 (Dissolved)	1	Collected from MW-RGP8
SVOC: USEPA Method 8270D (Total)	1	Collected from UNKMW-101
SVOC: USEPA Method 8270D (Dissolved)	1	Collected from UNKMW-101
PAHs only: USEPA Method 8270D (Total)	1	Collected from MW-RGP8
PAHs only: USEPA Method 8270D (Dissolved)	1	Collected from MW-RGP8
VPH and target VOCs: MADEP-04-1.1	1	Collected from MW-RGP8
Pesticides: USEPA Method 8081B (Total)	1	Collected from UNKMW-101
Pesticides: USEPA Method 8081B (Dissolved)	1	Collected from UNKMW-101

Note: Samples collected for dissolved analyses were field filtered using a 0.45 micron filter prior to sample preservation.

Groundwater samples were collected by GEC during the period 2015 to 2017.

Temporal Distribution of Samples

For Lot 37, soil samples exist for the period 2004 to 2016. The samples collected by VHB in 2004 were intended to support MCP response actions conducted at that time for the then current landowner. The samples collected by GEC during the period 2011 to 2016 were intended to determine both: (1) baseline conditions of the fill to support due diligence activities, a Phase I Initial Site Investigation and Method 3 Risk Characterization; and (2) post-remedial conditions. For Lot 42, soil samples exist for the period 2011 to 2017. Each of these samples were collected by GEC for analysis and were intended to determine both: (1) baseline conditions of the fill to support due diligence activities, a Phase I Initial Site Investigation and Method 3 Risk Characterization; and (2) post-remedial conditions. Given the persistence of most of the OHM detected in soils, a significant temporal variation in OHM levels in soils is not expected.

Groundwater samples were collected during the period 1985 to 2016, which is a thirty-one year period. Groundwater samples were analyzed for SVOCs in 1985, 1988, 1992, 1993 and 2015. During that period, 2-bis(ethylhexyl)phthalate and naphthalene was detected only in groundwater samples collected in 1985 but not in those collected in 1988, 1992, 1993, 2015 and 2016. Low levels of light molecular weight PAHs (i.e., naphthalene, 2-methylnaphthalene, phenanthrene and acenaphthylene) were detected in a groundwater sample in 2016 from a temporary monitoring well installed in a remedial excavation. Groundwater samples were collected for EPH and PAH analysis in 2004, 2014 and 2016. No EPH or PAHs (including naphthalene) were detected in any sample collected in 2004 or 2014. Low levels of naphthalene were detected in groundwater samples collected in 2016 from a temporary monitoring well installed in a remedial excavation. Groundwater samples were collected for analysis of PCBs in 2014; no PCBs were detected. Groundwater samples were collected for analysis of pesticides in 2015; none were detected. Groundwater samples were collected for analysis of VPH and target VOCs in 2014, 2015 and 2016; toluene was detected in 2014 at a very low level in one groundwater sample. Groundwater samples were collected for analysis of VOCs in 1988, 1992, 1993, 2004 and 2014. No VOCs were detected.

Groundwater samples were collected in 1985, 1988, 2014 and 2015 for total metal analysis, and in 1993, 2004, 2014 and 2015 for dissolved metal analysis. Dissolved antimony, arsenic, barium, chromium, nickel, vanadium and zinc were detected in one or more groundwater samples. In particular, monitoring well MW-3 contained potentially significant levels of dissolved antimony, nickel, vanadium and zinc in September 2014. After redeveloping the well, additional groundwater

samples were collected in December 2014 and March 2015 for metal analyses. Given the relatively minor impact to groundwater, sufficient temporal groundwater sampling has been conducted for the two lots.

Completeness

As with all sites, additional sampling and analyses could be conducted to address uncertainties in the data set. However, sufficient data exists to support the Permanent Solution. In particular, data was obtained for all samples identified as critical. The existing data is considered complete.

Inconsistency and Uncertainty

Inconsistencies existed for the levels of metals in groundwater samples from MW-3 and GEC-3B. This inconsistency was due to the very fine silts present in the groundwater samples, even after filtration. Therefore, the two monitoring wells were developed again to reduce the amount of fines in the groundwater samples and to obtain more representative groundwater data.

Uncertainties are inherent in the body of data collected for any disposal site. However, the uncertainties have been substantially limited for this Site because:

1. Soil and groundwater samples were collected for analysis of a broad range of OHM;
2. A large number of soil samples were collected for analysis;
3. Most of the fill at the Site was excavated and processed as part of development, which minimizes the likelihood of undiscovered contamination being present at the Site;
4. The fill was placed in the 1970s and the historic groundwater data indicates little to no impact to groundwater; therefore, a future impact to groundwater is unlikely to occur;
5. Lead-contaminated soils were treated to reduce the potential for future leaching of lead to groundwater; and
6. Soils containing volatile contamination (e.g., coal tar and suspect gasoline contamination) were excavated and removed from the Site, which minimizes the potential for future impact to the residential apartment buildings from vapor intrusion.

Information Considered Unrepresentative

Soil samples collected from the following locations are no longer considered representative of Site conditions, because these soils were transported off-site for treatment or disposal as part of the Construction RAM (725 cubic yards) and Remediation RAM (9,128 cubic yards):

1. Coal tar and coal tar-contaminated soils from Lot 42 EP3A, RGP-4, RGP-345, RGP-7 and RGP-10, under the Remediation RAM;

2. Excess PAH-contaminated soils (beyond capacity of on-site soil repositories) for Lot 42 EP3C, RGP-1, RGP-6 and RGP-12, under the Remediation RAM;
3. Soils containing a strong, offensive organic odor from RGP-2 under the Construction RAM; and
4. Gasoline-contaminated soils from RGP-8, under the Construction RAM.

Soil samples collected from the following locations are no longer considered representative of the 0-15 foot interval soils, because these soils were placed in on-site soil repositories located more than 15 feet below final grade during the Construction RAM:

1. Lead-contaminated soils from Lot 37 EP1;
2. Lead-contaminated soils from Lot 42 EP2B;
3. PAH-contaminated soils from Lot 42 EP3C (some); and
4. PAH-contaminated soils from RGP-1 (some), RGP-3, RGP-3456, RGP-6 (some) and RGP-9.

Soil samples collected from the following location is no longer considered representative of the 0-14 foot interval soils, because these soils (1,100 cubic yards) were placed in an on-site soil repository located more than 14 feet below final grade during the Construction RAM:

1. PCB-contaminated soils (containing 1-5 mg/kg PCB) from Lot 42 EP1A; and
2. PAH-contaminated soils from Lot 42 EP1A.

For groundwater, analytical data collected during the period 2014 to 2016 are considered representative of current site conditions. The earlier analytical data are used to support the minimal impact on groundwater by the overlying contaminated fill. At the location of monitoring wells MW-3 and GEC-3B, very fine silt was present in the screen interval of the wells. Filtered groundwater samples were found to be very turbid. After redeveloping the monitoring wells to get rid of the fines, groundwater samples were collected again in March 2015 for metal analysis. The March 2015 samples from these two monitoring wells are considered representative of dissolved-phase metal conditions of the aquifer in this location. The earlier metal analytical data for MW-3 and GEC-3B are considered not representative.

5.2 Data Usability Assessment

The Data Usability Assessment has both an analytical and field component. According to MassDEP's policy, it *is used to evaluate whether analytical data points are scientifically valid and defensible, and of a sufficient level of precision, accuracy and sensitivity to support the RAO* [now referred to as the Permanent Solution].

Analytical Data Usability Assessments / Data Evaluation Criteria

The data collected by GEC from 2011 to 2017 to support the Permanent Solution was obtained following the release of MassDEP's *Compendium of Analytical Methods Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data in Support of Response Actions Conducted Under the Massachusetts Contingency Plan (MCP)* (WSC-CAM-VIIA) (CAM).

During the period 2011 to 2017, one hundred and eighty-three (183) laboratory reports containing analytical data were obtained for the Site as identified in Appendix C Tables C-1.1, 2.1, 3.1, 4.1 and 5.1. Given the large amount of analytical data collected during this period, the analytical data obtained by other consultants during the period 1985 to 2004 were not included in the data validation process. All or nearly all laboratory reports contain data that are considered representative of current Site conditions, unless the soils were excavated and removed from the Site. The analytical data for certain soil samples are not representative because soils from these sampling locations were subsequently excavated and transported off-site.

The data from the analytical reports were evaluated for compliance with the CAM. Most samples were submitted to Con-Test Analytical Laboratory (Con-Test) under chain-of-custody documentation. One set of soil samples was submitted to Test America in 2012. Due to capacity issues at Con-Test, during the excavation of PCB-contaminated soils in Lot 42 EP1A in 2017, twenty-two sets of soil samples were submitted to Spectrum Analytical. All samples were submitted under chain-of-custody documentation and were received by the laboratories in good condition (except for certain samples collected for VPH analysis, as described below).

All data were generated by a CAM-approved method. For each laboratory report, Appendix C Tables C-1.2 to C-1.5, C-2.2 to C-2.5, C-3.2 to C-3.5, C-4.2 to C-4.5 and C-5.2 to C-5.5 provide information on whether the analytical data met the CAM requirements for Presumptive Certainty, CAM reporting limits, CAM complete analyte list for each analysis, and CAM-specified Quality Control (QC) performance criteria.

Except for certain soil samples submitted for disposal criteria testing, all data sets meet the requirements for Presumptive Certainty. Analytical data sets often have one or more issues identified in the case narrative, pertaining to QC, achievement of CAM-specified detection limits and analysis for all analytes of concern for the CAM protocol (analytical method). All soil samples analyzed for Aroclor PCBs were analyzed via USEPA Method 8082A, with most samples undergoing Soxhlet extraction. All CAM-specified Aroclor PCBs were included in these analyses.

Certain soil samples submitted for analysis of VPH and target VOCs via MADEP-04-1.1 were received by the laboratory in either insufficient or too much soils. However, each sample contained methanol; therefore, these samples do not meet the CAM criterion for gross failure.

For this Site, the detection limit issues are identified in Appendix C Tables C-1.4, C-2.4, C-3.4, C-4.4 and C-5.4. At times, detection limits were elevated in certain samples and for certain OHM above those limits specified in the applicable CAM method. When elevated detection limits were reported, it was often due to the presence of high concentrations of target compounds or to the presence of matrix interferences. For a sample with an elevated detection limit for a particular target compound that was not detected, one-half the reported detection limit was used for the risk characterization, which is a more conservative approach (i.e., errs on the side of over-estimating risk) than would presuming no compound was present.

For this Site, QC issues are identified in Appendix C Tables C-1.5, C-2.5, C-3.5, C-4.5 and C-5.5. Three samples collected for pH analysis were analyzed outside their holding time; however, it was performed before the 2-fold holding time was exceeded, which would have constituted gross failure. Thirteen soil samples collected on August 22, 2014 were extracted on September 16, 2014 and analyzed for EPH and PAHs via MADEP-04-1.1 on September 17, 2014. These samples were extracted outside their holding time (14 days), but less than 2-fold beyond their hold time (28 days), which means they did not meet the CAM criterion for gross failure. None of the QC issues were substantive. None of the data met a CAM criterion for gross failure.

Field Data Usability Assessment

Field data collected by GEC during the remediation are not directly useful for determining the horizontal and vertical extent of contamination or to support the determination as to whether clean-up objectives are met. No field data were used in place of analytical data. However, visual observations, such as of coal tar or stained soils, were used to determine when excavation should proceed, but not when it should stop. Analytical data was used for that determination.

Rejection of Analytical Data as the Result of Gross Failure

The data used in support of the risk characterization and Permanent Solution were assessed against the criteria indicative of "gross failure" in quality control, as described in Appendix IV of MassDEP's guidance, *Representativeness Evaluations and Data Usability Assessments*. For inorganic compounds, criteria indicative for "gross failure" exist for holding times, laboratory control samples and laboratory control sample duplicates and matrix spike recoveries. For organic compounds, criteria indicative of "gross failure" exist for holding time, sample preservation for VOC analyses, laboratory

control samples and laboratory control sample duplicates, surrogate recoveries, matrix spike and matrix spike duplicate recoveries, calibration, internal standards, fractionation check standard recoveries for EPH analyses, and dual column precision for PCB analyses.

A few soil samples were analyzed after the applicable extraction or analysis hold times; however, none were analyzed more than two-fold beyond its hold time. If a sample is held more than two-fold beyond it holding time, then it meets the holding time criterion for rejection for "gross failure". No sample was rejected based on exceeding the holding time. All soil samples collected for analysis were properly or adequately preserved. No sample was rejected based on improper or lack of preservation. For each sample / analysis, no laboratory control sample and / or laboratory control sample duplicate recoveries were less than CAM's recommended criteria for gross failure. None of the OHM detected in any sample met the laboratory control sample criterion for "gross failure" rejection. Based on the above, no sample was rejected as a result of "gross failure".

5.3 Conclusions

The data set relied upon to support the Risk Characterization and Permanent Solution with Conditions meets the CAM requirements for presumptive certainty, is scientifically valid, and is of sufficient accuracy, precision and completeness. The data is also sufficiently representative with regards to the spatial and temporal distribution of sampling points. Decisions in sampling location were made that would tend to err on the side of obtaining over-estimates of OHM concentrations. Therefore, the resulting risk characterization relies on data that would contribute to a conservative estimate of risk.

6.0 PERMANENT SOLUTION STATEMENT

6.1 Permanent Solution with Conditions for RTN 4-3023897

This LSP Opinion is prepared by Brian T. Butler (L.S.P. #5736) and Goldman Environmental Consultants, Inc. of Braintree, Massachusetts, on behalf of Great Pond Residential LLC, the owner, c/o The Dolben Company, Inc. of Woburn, Massachusetts. A release of lead, phenanthrene and C11-C22 aromatic hydrocarbons at this property resulted in a reportable condition assigned RTN 4-3023897, identified as Lot 37. Lot 37 is 4.47 acres in surface area. This release impacted the upland portion of Lot 37. The RTN 4-3023897 disposal site is located entirely within the boundaries of Lot 37. The surface area of the disposal site is approximately 3.2 acres. Refer to Figure 3A for the location of the disposal site boundaries relative to the property boundaries for Lot 37.

A second reportable condition was identified within RTN 4-3023897 as result the presence of 2-methylnaphthalene and C9-C10 aromatic hydrocarbons at levels exceeding applicable RCS-1

Reportable Concentrations. RTN 4-25906 was assigned to the new release and later linked to RTN 4-3023897 following the completion of remediation at RTN 4-25906.

Provided herein is the Permanent Solution Statement for RTN 4-3023897 (Lot 37). The Conceptual Site Model for RTN 4-3023897, which is updated to reflect the remedial activities and recent construction conducted at the Site, is provided in Section 4.0, above. No other Partial Permanent Solution or Temporary Solution applies to RTN 4-3023897.

This final Permanent Solution Statement finds that the conditions within RTN 4-3023897 are consistent with a Permanent Solution with Conditions. Two conditions apply to this area: (1) the presence of certain metals in soils at levels attributable to Anthropogenic Background, which applies to this entire portion of the disposal Site (except for the lead-contaminated soils located within the Building 4 soil repository, 15 feet or more below grade); and (2) gardening of edible produce is assumed controlled by Best Management Practices.

This LSP Opinion presents the facts pertaining to the environmental condition of the RTN 4-3023897 disposal site located on a portion of Lot 37 on Pacella Park Drive in Randolph, Massachusetts, necessary to issue a Permanent Solution Statement with Conditions. This Permanent Solution Statement is prepared in conformance with 310 CMR 40.1056, and meets the performance standards specified at 310 CMR 40.1004. The findings of the Permanent Solution Statement are based on the findings in Sections 2 to 5 of this report, of the Remedial and Construction RAM Completion Statements, and of the Phase I Report.

This disposal Site meets the requirements of a Permanent Solution with Conditions, as documented below.

Source Elimination or Control [310 CMR 40.1003(5)]: There are no tanks or other structures that are continuing sources of contamination. The lead-contaminated soils were treated to reduce leachable lead levels to RCRA's criterion of <5 mg/l TCLP lead, before the treated soils were placed more than 15 feet below grade and above the water table. Dissolved lead has not impacted groundwater to date and is unlikely to impact it in the future. The contaminated soils for the old gasoline release of RGP-8 (RTN 4-25906) were excavated and removed from the Site. The remaining OHM of concern for this disposal Site are relatively non-mobile and non-volatile, and are present in soils. The OHM in soils is not significantly leaching to groundwater or volatilizing to soil vapor or indoor air. All sources of OHM are eliminated or controlled.

Migration Control [310 CMR 40.1003(6)]: Based on the physical and chemical characteristics of the OHM of concern remaining at the Site, leaching of dissolved-phase OHM to groundwater and

volatilization of OHM into soil vapor then into the indoor air of the new site buildings are unlikely to occur. The most contaminated lead-contaminated soils are located more than 15 feet below grade in a designated on-Site soil repository. No significant OHM migration is occurring. Site conditions are stable.

Non-Aqueous Phase Liquid (NAPL) [310 CMR 40.1003(7)]: No NAPL is present at the Site, and based on the type and magnitude of OHM detected in soils and groundwater, it is unlikely to be present.

A Level of No Significant Risk of Harm has been Achieved [310 CMR 40.0900]: Based on the Method 3 Risk Characterization presented in Appendix A of the Phase I Report, as updated by post-remedial risk assessments documented in the Construction and Remediation RAM Status Reports and Completion Reports, No Significant Risk of harm to health, safety, public welfare and the environment has been achieved for the entire disposal Site, as described in Section 3.0, above. The following assumptions were used in the risk characterization / risk assessments: (1) background conditions for some hazardous materials are consistent with Anthropogenic Background from fill placed on-Site prior to 1983; and (2) gardening of edible produce is assumed controlled by Best Management Practices. In addition, the lead-contaminated soils and certain PAH-contaminated soils (that originated from Lot 42) are presumed to remain located more than 15 feet below final grade within the Building 4 soil repository. VHB conducted coal ash determination investigations on three soil samples collected from the fill on Lot 37. The soil samples were determined to contain particles consistent with asphalt, coal tar, anthracite coal, bituminous coal and/or coal ash, which is consistent with the historic fill origin of the soils. They do not indicate the presence of a historic petroleum release. Although these soils, which were placed prior to 1983, contain PAHs likely associated with the presence of coal ash, the PAHs were conservatively retained as contaminants of concern in the risk characterization. Therefore, PAHs were not assumed consistent with Anthropogenic Background at Lot 37. The presence of certain metals in soils of Lot 37 were determined to be consistent with Anthropogenic Background.

Feasibility of Achieving or Approaching Background [310 CMR 40.1020]: The feasibility of achieving or approaching background conditions is a Phase III requirement that must be conducted prior to constructing a building over a portion of a disposal site with contaminated soils. This feasibility evaluation was conducted consistent with Section 9.0 of MassDEP Policy #WSC-04-160, *Conducting Feasibility Evaluations under the MCP*, and was intended to support the Construction RAM Plan. The feasibility evaluation is provided in Appendix B of the Construction RAM Plan, which was submitted to MassDEP in October 2015. It focused on the top 15 feet of fill material located across both Lots 37 and 42. The feasibility evaluation excluded: (1) the coal tar contaminated soils of Lot 42 because these soils would be transported off-site as part of the Remediation RAM; and (2) the

lead-contaminated soils of Lots 37 and 42 because these soils would be treated and placed more than 15 feet below final grade. Because persistent OHM are present, a Site-specific feasibility evaluation was conducted, which entailed a technological evaluation and a benefit-cost evaluation. As a result of this Site-specific feasibility evaluation, a determination was made that it was not feasible to approach or achieve background conditions.

Comparison to Upper Concentration Limits and Applicable or Suitably Analogous Standards [310 CMR 40.1040(2)(b-c)]: A Method 3 Risk Characterization was conducted for this Site, which relies on a comparison of Site conditions to Upper Concentration Limits. No groundwater or soil exposure point concentration exceeded its applicable Upper Concentration Limit, as documented in Tables 9.1 and 9.2 and Section 8.9.2 of Appendix A of the Phase I Report.

Because part of the Site is located within the Zone A for the Blue Hill River the aquifer within the Zone A is categorized as GW-1, the Massachusetts Maximum Contaminant Levels (MMCLs) are applicable or suitably analogous public health standards for the portion of the Site located within the Zone A. Based on groundwater analytical data for monitoring wells, no groundwater exposure point concentration exceeded an applicable MMCL, as documented in Table 7 and Sections 8.8.4 to 8.8.6 of Appendix A of the Phase I Report.

Data Generation – The analytical data used to support the Permanent Solution was generated pursuant to MassDEP's Compendium of Analytical Methods. The data sets relied upon to support the Phase I, risk characterization, achievement of cleanup objectives and Permanent Solution are scientifically valid, and of sufficient accuracy, precision and completeness. The Data Usability Assessment and Data Representativeness Evaluation is presented in Section 5.0, above.

Assumed Limitations on Future Activities, Uses and Conditions relied upon in the Risk Characterization that Require a Notice of AUL [310 CMR 40.1012]: No assumptions were used in the Method 3 Risk Characterization and post-remedial risk assessments, as described in Section 3.0, above, that would require a Notice of Activity and Use Limitation.

Assumed Limitations on Future Activities, Uses and Conditions relied upon in the Risk Characterization that do not Require a Notice of AUL [310 CMR 40.1012(3)(b) and 40.1013]: During the Method 3 Risk Characterization and post-remedial risk assessments, there were assumed limitations on future activities, uses and conditions that do not require a Notice of AUL. Specifically, certain metals are presumed present in soils at levels consistent with Anthropogenic Background, not Natural Background; and gardening of edible produce is assumed controlled by Best Management Practices. Recommended Best Management Practices for this residential apartment complex are provided in Appendix D and were obtained from MassDEP's guidance, entitled *Best Management Practices ("BMPs") for Non-Commercial Gardening at Disposal Sites (WSC # 14-910)*.

In addition, lead-contaminated soils and certain PAH-contaminated soils (that originated from Lot 42) are presumed to remain located more than 15 feet below final grade within the Building 4 soil repository. The Building 4 soil repository is located at elevations of 116 to 125 feet above mean sea level and the final grade at Building 4 has an elevation of 143 feet above mean sea level, as depicted in Figure 3C.

Requirements for Active Exposure Pathway Mitigation Measure [310 CMR 40.1025]: No Active Exposure Pathway Mitigation Measure is needed for this disposal Site to maintain a condition of No Significant Risk of harm.

Permanent Solution with Conditions: Pursuant to 310 CMR 40.1040, 40.1041 and 40.1056, the entirety of disposal Site RTN 4-3023897, comprised the uphill portion of Lot 37, meets the requirements of a Permanent Solution with Conditions, with the conditions being: (1) the presence of OHM in soils at levels consistent with Anthropogenic Background; and (2) gardening of edible produce is assumed controlled by Best Management Practices. No AUL is required to make this Permanent Solution with Conditions valid. This finding is based on the information included in this report and response actions taken and completed at this Site prior to the date of this report

6.2 Permanent Solution with Conditions for RTN 4-25464

This LSP Opinion is prepared by Brian T. Butler (L.S.P. #5736) and Goldman Environmental Consultants, Inc. of Braintree, Massachusetts, on behalf of Great Pond Residential LLC, the owner, c/o The Dolben Company, Inc. of Woburn, Massachusetts. A release of lead, nickel, vanadium, PCBs, benzene, C11-C22 aromatic hydrocarbons, C19-C26 aliphatic hydrocarbons, naphthalene, phenanthrene and fourteen additional PAHs at this property resulted in a reportable condition assigned RTN 4-25464, identified as Lot 42. Lot 37 is 8.9 acres in surface area. This release impacted the upland portion of Lot 42. The RTN 4-25464 disposal site is located entirely within the boundaries of Lot 42. The surface area of the disposal site is approximately 7.2 acres. Refer to Figure 3A for the location of the disposal site boundaries relative to the property boundaries for Lot 42.

Provided herein is the Permanent Solution Statement for RTN 4-25464 (Lot 42). The Conceptual Site Model for RTN 4-25464, which is updated to reflect the remedial activities and recent construction conducted at the Site, is provided in Section 4.0, above. No other Partial Permanent Solution or Temporary Solution applies to RTN 4-25464.

This final Permanent Solution Statement finds that the conditions within RTN 4-25464 are consistent with a Permanent Solution with Conditions. Two conditions apply to this area: (1) the presence of certain metals and/or PAHs in soils at levels attributable to Anthropogenic Background,

which applies to this entire portion of the disposal Site (except for the soils located within the Club House soil repository, Building 3 parking lot soil repository and Building 1 soil repository, 15 feet or more below grade); and (2) gardening of edible produce is assumed controlled by Best Management Practices.

This LSP Opinion presents the facts pertaining to the environmental condition of the RTN 4-25464 disposal site located on a portion of Lot 42 on Pacella Park Drive in Randolph, Massachusetts, necessary to issue a Permanent Solution Statement with Conditions. This Permanent Solution Statement is prepared in conformance with 310 CMR 40.1056, and meets the performance standards specified at 310 CMR 40.1004. The findings of the Permanent Solution Statement are based on the findings in Sections 2 to 5 of this report, of the Remedial and Construction RAM Completion Statements, and of the Phase I Report.

This disposal Site meets the requirements of a Permanent Solution with Conditions, as documented below.

Source Elimination or Control [310 CMR 40.1003(5)]: There are no tanks or other structures that are continuing sources of contamination. The lead-contaminated soils were treated to reduce leachable lead levels to RCRA's criterion of <5 mg/l TCLP lead, before the treated soils were placed more than 15 feet below grade and above the water table. Dissolved lead has not impacted groundwater to date and is unlikely to impact it in the future. The coal tar and coal tar-contaminated soils of Lot 42 were identified as potential sources of vapor intrusion to indoor air of a future building. The coal tar and coal tar-contaminated soils were excavated and removed from the Site. The remaining OHM of concern for this disposal Site are relatively non-mobile and non-volatile, and are present in soils. The OHM in soils is not significantly leaching to groundwater or volatilizing to soil vapor or indoor air. All sources of OHM are eliminated or controlled.

Migration Control [310 CMR 40.1003(6)]: Based on the physical and chemical characteristics of the OHM of concern remaining at the Site, leaching of dissolved-phase OHM to groundwater and volatilization of OHM into soil vapor then into the indoor air of the new site buildings are unlikely to occur. The most contaminated lead- and PAH-contaminated soils are located more than 15 feet below grade in two designated on-Site soil repositories (i.e., Club-House Repository and Building 3 Parking Lot Repository). The most contaminated PCB-contaminated soils are located more than 14 feet below grade in a third designated on-Site soil repository (i.e., Building 1 Repository). No significant OHM migration is occurring. Site conditions are stable.

Non-Aqueous Phase Liquid (NAPL) [310 CMR 40.1003(7)]: Coal tar was present at the Site, but was excavated in its entirety and transported off-site during the Remediation RAM. Following

completion of the Remediation RAM, no NAPL is present at the Site, and based on the type and magnitude of residual OHM detected in soils and groundwater, it is unlikely to be present.

A Level of No Significant Risk of Harm has been Achieved [310 CMR 40.0900]: Based on the Method 3 Risk Characterization presented in Appendix A of the Phase I Report, as updated by post-remedial risk assessments documented in the Construction and Remediation RAM Status Reports and Completion Reports, No Significant Risk of harm to health, safety, public welfare and the environment has been achieved for the entire disposal Site, as described in Section 3.0, above. The following assumptions were used in the risk characterization / risk assessments: (1) background conditions for some hazardous materials are consistent with Anthropogenic Background from fill placed on-Site prior to 1983; and (2) gardening of edible produce is assumed controlled by Best Management Practices. In addition, lead-, PAH- and/or PCB-contaminated soils are presumed to remain located more than 15, 15 and 14 feet below final grade, respectively, in soil repositories. VHB conducted coal ash determination investigations on three soil samples collected from the fill on Lot 37. The soil samples were determined to contain particles consistent with asphalt, coal tar, anthracite coal, bituminous coal and/or coal ash, which is consistent with the historic fill origin of the soils. They do not indicate the presence of a historic petroleum release. Although these soils, which were placed prior to 1983, contain PAHs likely associated with the presence of coal ash, the PAHs were conservatively retained as contaminants of concern in the risk characterization with one exception. PAHs were not assumed consistent with Anthropogenic Background at all Lot 42 exposure points, except for Lot 42 EP1B, where PAH levels were significantly lower than elsewhere across Lot 42. The presence of certain metals in soils of Lot 42 were determined to be consistent with Anthropogenic Background.

Feasibility of Achieving or Approaching Background [310 CMR 40.1020]: The feasibility of achieving or approaching background conditions is a Phase III requirement that must be conducted prior to constructing a building over a portion of a disposal site with contaminated soils. This feasibility evaluation was conducted consistent with Section 9.0 of MassDEP Policy #WSC-04-160, *Conducting Feasibility Evaluations under the MCP*, and was intended to support the Construction RAM Plan. The feasibility evaluation is provided in Appendix B of the Construction RAM Plan, which was submitted to MassDEP in October 2015. It focused on the top 15 feet of fill material located across both Lots 37 and 42. The feasibility evaluation excluded: (1) the coal tar contaminated soils of Lot 42 because these soils would be transported off-site as part of the Remediation RAM; and (2) the lead-contaminated soils of Lots 37 and 42 because these soils would be treated and placed more than 15 feet below final grade. Because persistent OHM are present, a Site-specific feasibility evaluation was conducted, which entailed a technological evaluation and a benefit-cost evaluation. As a result of this Site-specific feasibility evaluation, a determination was made that it was not feasible to approach or achieve background conditions.

Comparison to Upper Concentration Limits and Applicable or Suitably Analogous Standards [310 CMR 40.1040(2)(b-c)]: A Method 3 Risk Characterization was conducted for this Site, which relies on a comparison of Site conditions to Upper Concentration Limits. No groundwater or soil exposure point concentration exceeded its applicable Upper Concentration Limit, as documented in Tables 9.1 and 9.2 and Section 8.9.2 of Appendix A of the Phase I Report.

Because part of the Site is located within the Zone A for the Blue Hill River the aquifer within the Zone A is categorized as GW-1, the Massachusetts Maximum Contaminant Levels (MMCLs) are applicable or suitably analogous public health standards for the portion of the Site located within the Zone A. Based on groundwater analytical data for monitoring wells, no groundwater exposure point concentration exceeded an applicable MMCL, as documented in Table 7 and Sections 8.8.4 to 8.8.6 of Appendix A of the Phase I Report.

Data Generation – The analytical data used to support the Permanent Solution was generated pursuant to MassDEP's Compendium of Analytical Methods. The data sets relied upon to support the Phase I, risk characterization, achievement of cleanup objectives and Permanent Solution are scientifically valid, and of sufficient accuracy, precision and completeness. The Data Usability Assessment and Data Representativeness Evaluation is presented in Section 5.0, above.

Assumed Limitations on Future Activities, Uses and Conditions relied upon in the Risk Characterization that Require a Notice of AUL [310 CMR 40.1012]: No assumptions were used in the Method 3 Risk Characterization and post-remedial risk assessments, as described in Section 3.0, above, that would require a Notice of Activity and Use Limitation.

Assumed Limitations on Future Activities, Uses and Conditions relied upon in the Risk Characterization that do not Require a Notice of AUL [310 CMR 40.1012(3)(b) and 40.1013]: During the Method 3 Risk Characterization and post-remedial risk assessments, there were assumed limitations on future activities, uses and conditions that do not require a Notice of AUL. Specifically, certain metals and/or PAHs are presumed present in soils at levels consistent with Anthropogenic Background, not Natural Background; and gardening of edible produce is assumed controlled by Best Management Practices. Recommended Best Management Practices for this residential apartment complex are provided in Appendix D and were obtained from MassDEP's guidance, entitled *Best Management Practices ("BMPs") for Non-Commercial Gardening at Disposal Sites (WSC # 14-910).*

In addition, lead- and PAH-contaminated soils are located in the Club House soil repository and Building 3 parking lot repository, located at elevations of 118-127 and 118-121 feet above mean sea level, respectively, and more than 15 feet below ground surface, as depicted in Figure 3C. The final grade elevations in the vicinity of the Club House and Building 3 parking lot are 143 and 136 feet above mean grade, respectively. The Building 1 soil repository is located 14 feet or more below ground

surface (135 to 141.5 feet above mean sea level), as depicted in Figure 3C. The soils in this repository contain PCBs and PAHs, with the highest levels of contamination at the bottom of the repository. During the baseline risk characterization, No Significant Risk of harm was found to exist for the soils placed in this repository. The final grade elevation at Building 1 is 155.5 feet above mean sea level.

Requirements for Active Exposure Pathway Mitigation Measure [310 CMR 40.1025]: No Active Exposure Pathway Mitigation Measure is needed for this disposal Site to maintain a condition of No Significant Risk of harm.

Permanent Solution with Conditions: Pursuant to 310 CMR 40.1040, 40.1041 and 40.1056, the entirety of disposal Site RTN 4-25464, comprised the uphill portion of Lot 42, meets the requirements of a Permanent Solution with Conditions, with the conditions being: (1) the presence of OHM in soils at levels consistent with Anthropogenic Background; and (2) gardening of edible produce is assumed controlled by Best Management Practices. This finding is based on the information included in this report and response actions taken and completed at this Site prior to the date of this report

6.3 Public Involvement Activities

In accordance with 310 CMR 40.1403(3)(f), the Board of Selectmen and the Board of Health for the Town of Randolph were provided a copy of the Permanent Solution Statements for both RTN 4-3023897 and RTN 4-25464, written notification of the availability of the complete report containing the Permanent Solution Statements and instructions on how they may obtain a copy of the Statements from Great Pond Residential LLC. Copies of the letters sent to the Town of Randolph officials are provided in Appendix E.

As required by the Wetland Order of Condition #47g, the Town of Randolph Conservation Commission was provided a copy of the Permanent Solution Statements for Lots 37 and 42, 5 Pacella Park Drive, Randolph, Massachusetts, MassDEP RTN 4-3023897 and RTN 4-25464. A copy of the accompanying cover letter is provided in Appendix E.

7.0 WARRANTY

The conclusions and recommendations contained in this report are based on the information readily available to GEC and upon the current regulatory climate as of December 14, 2017. GEC provides no warranties on information provided by third parties and contained herein. Data compiled was in accordance with GEC's existing procedures and should not be construed beyond its limitations. Any interpretations or use of this report other than those expressed herein are not warranted.

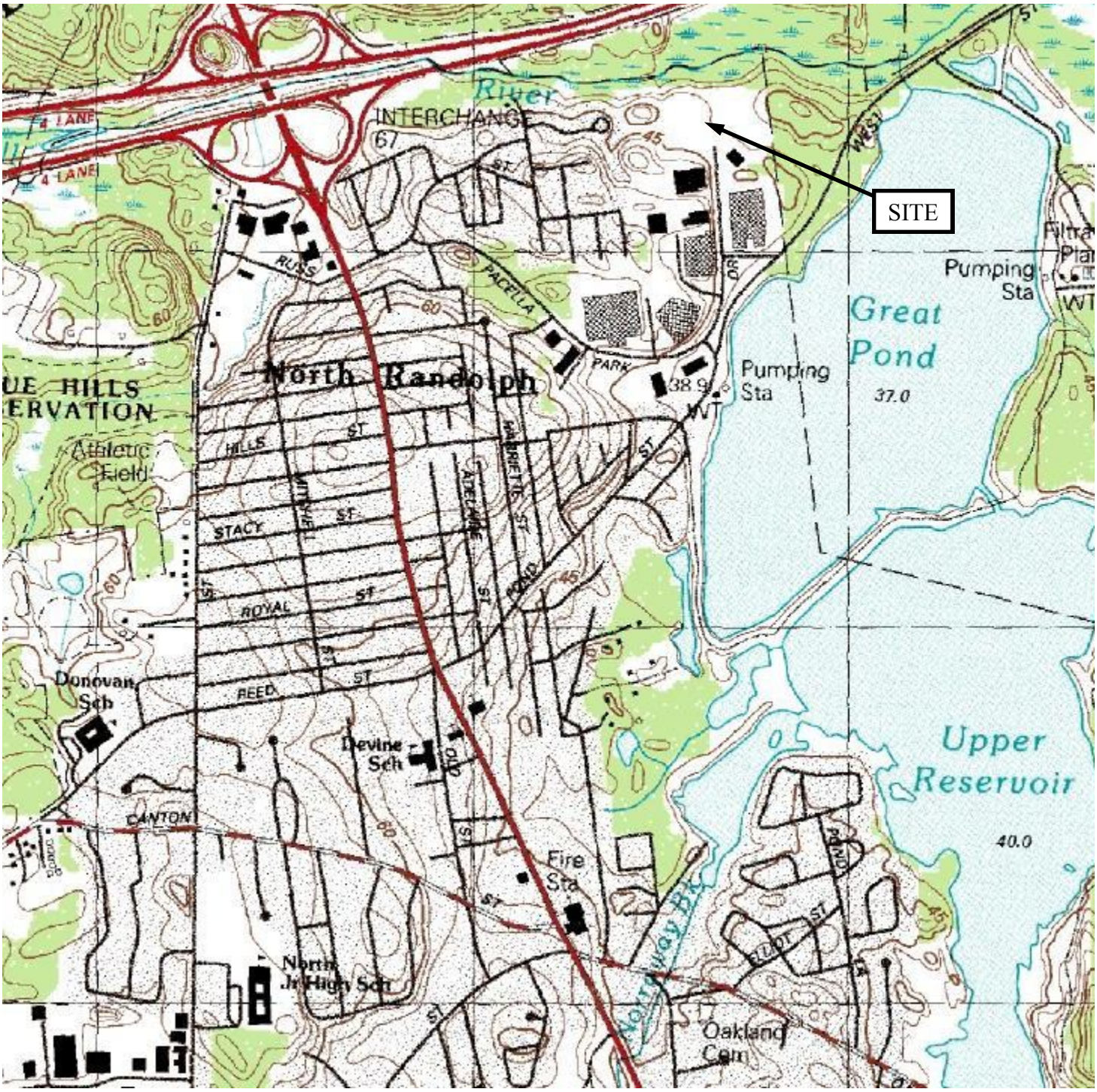
The use, partial use, or duplication of this report without the express written consent of Goldman Environmental Consultants, Inc. and/or Great Pond Residential LLC, c/o The Dolben Company, Inc., is strictly prohibited. This report is subject to GEC's Contract for Consulting Services with the client.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Eileen Furlong
Eileen A. Furlong
Principal, Sr. Risk Assessor

Brian Butler
Brian T. Butler, LSP
Sr. V.P., Operations

Brian Donahoe
Brian D. Donahoe
V.P., Environmental Services



USGS Topographic Map Blue Hills, Massachusetts Quadrangle

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781)356-9140 Fax: (781)356-9147
www.goldmanenvironmental.com

SITE LOCUS

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

GEC Project #: 1676-5190

Figure 1

Scale
1 : 25,000

N

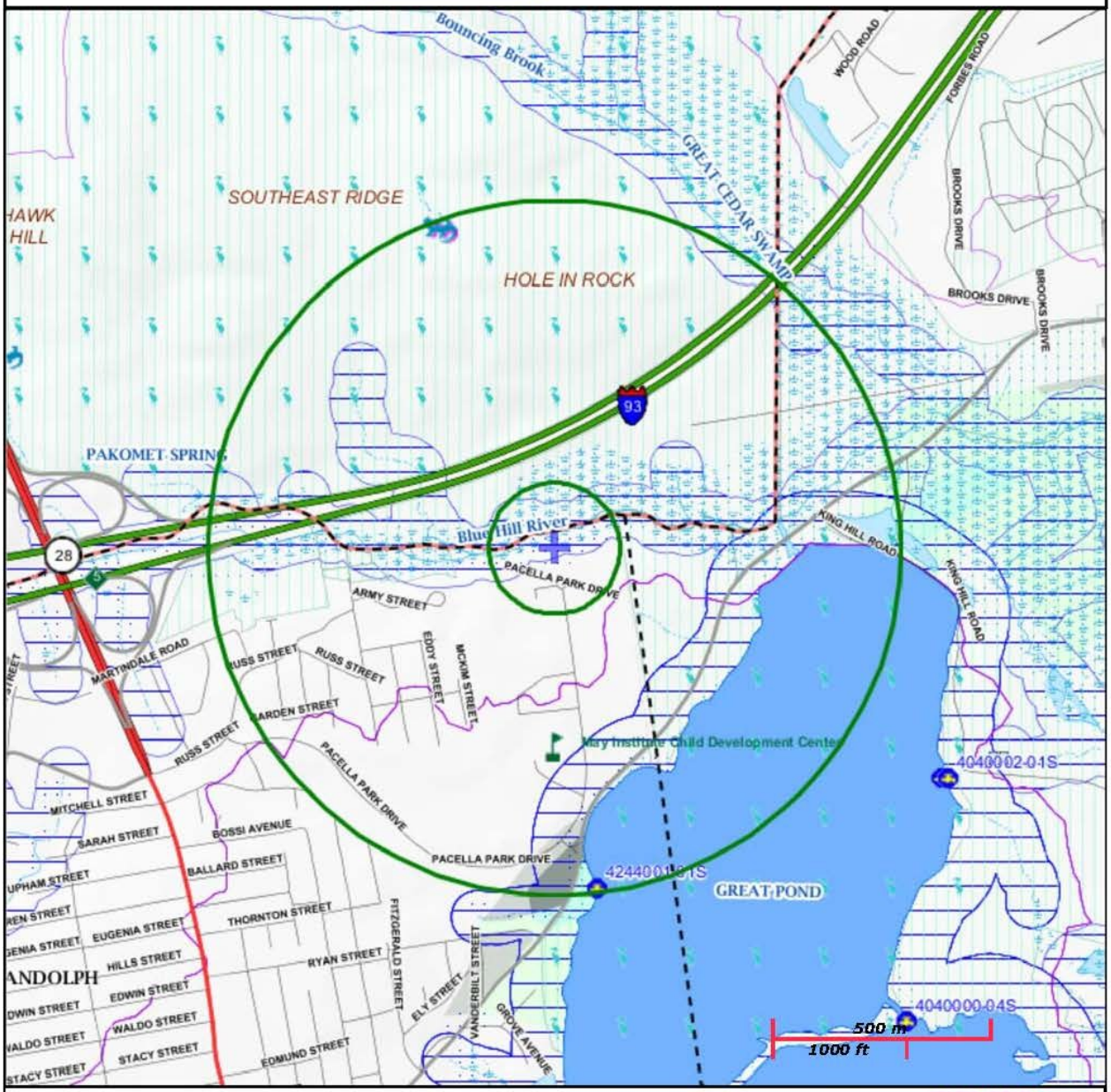
MassDEP - Bureau of Waste Site Cleanup

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

Site Information:
15 PACELLA PARK DRIVE RANDOLPH, MA
NAD83 UTM Meters:
4674673mN , 330668mE (Zone: 19)
October 17, 2014

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781)356-9140 Fax: (781)356-9147
www.goldmanenvironmental.com

Site Assessment Map

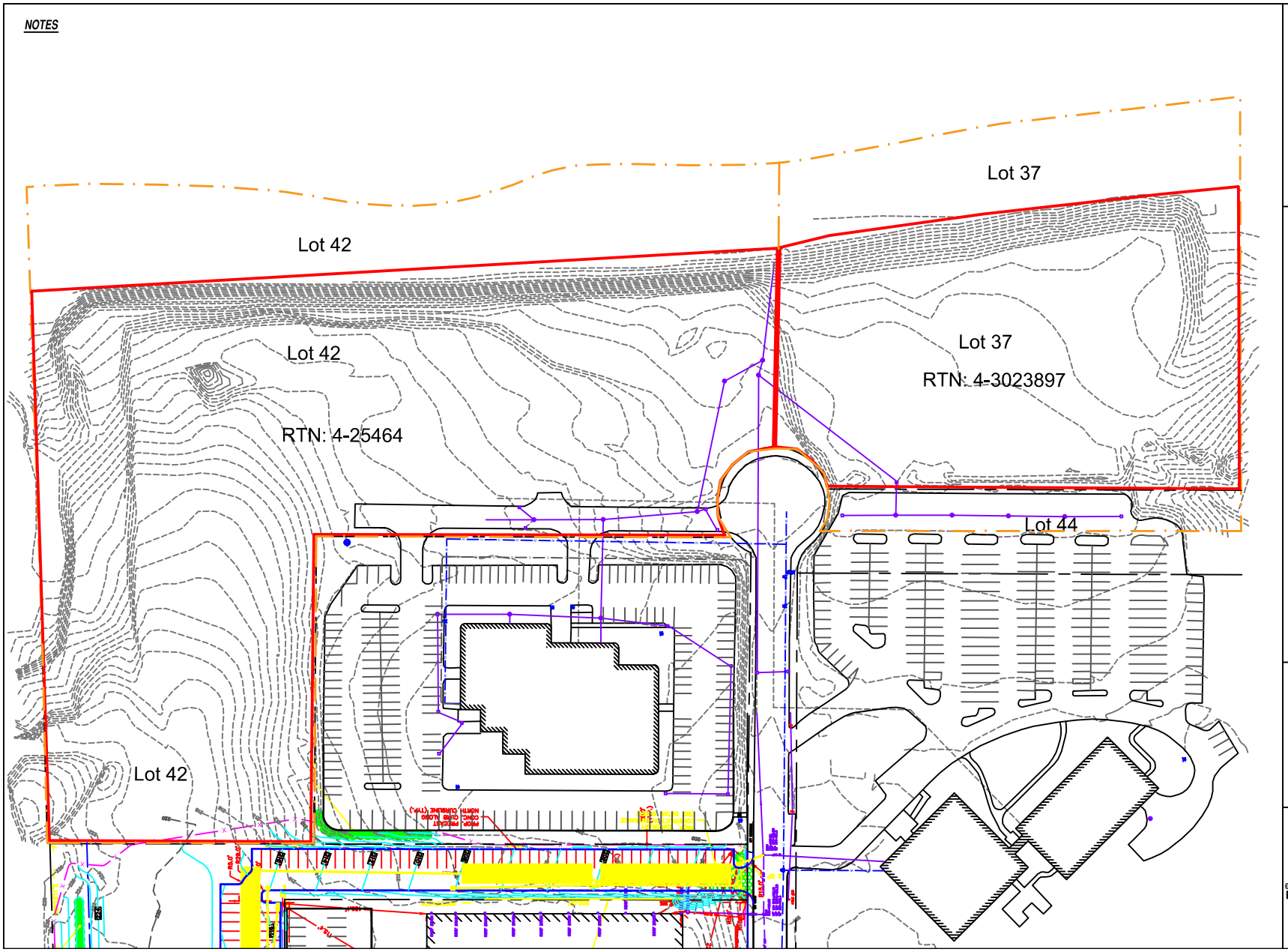
Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

GEC Project #: 1676-5190

Figure 2

N

NOTES



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

Property Line Boundaries

Disposal Site Boundaries

Site Plan, showing Property & Disposal Site Boundaries

Lots 37 and 42
Pacella Park Drive
Randolph, Massachusetts

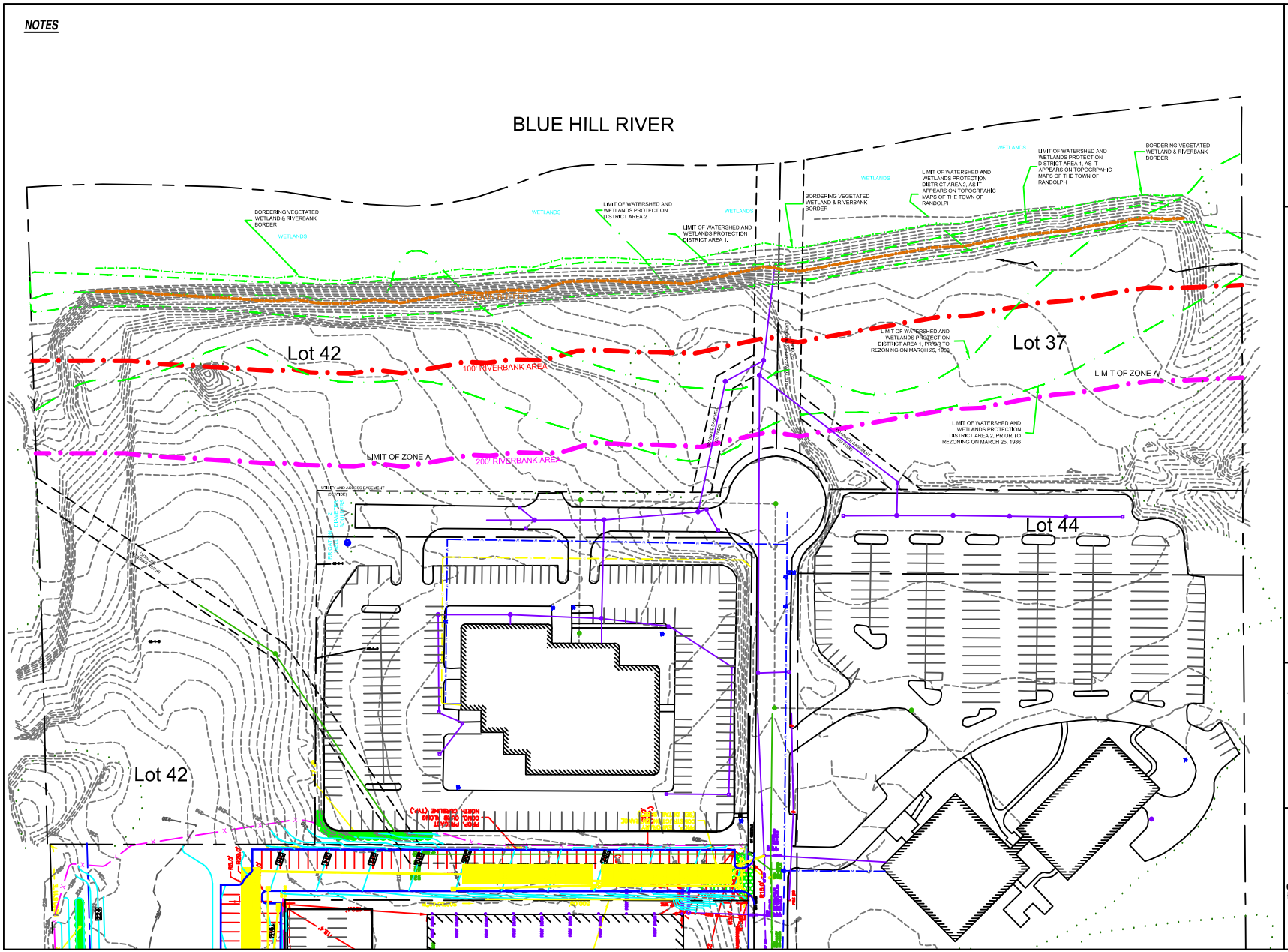
GEC Project Number 1676-5190
GEC File Number 091614A

Figure 3A

SCALE
0 50 100
1 : 40'

N

NOTES



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

- Limit of Watershed and Wetlands Proction District for Areas 1 and 2 Over Time
- River bank Area
- Town Buffer

Site Plan, showing Limits of Wetland Protection Areas, Watershed, Wetlands Protection Districts, and River Bank Areas

Lots 37 and 42

Pacella Park Drive
Randolph, Massachusetts

GEC Project Number 1676-5190
GEC File Number 091614A

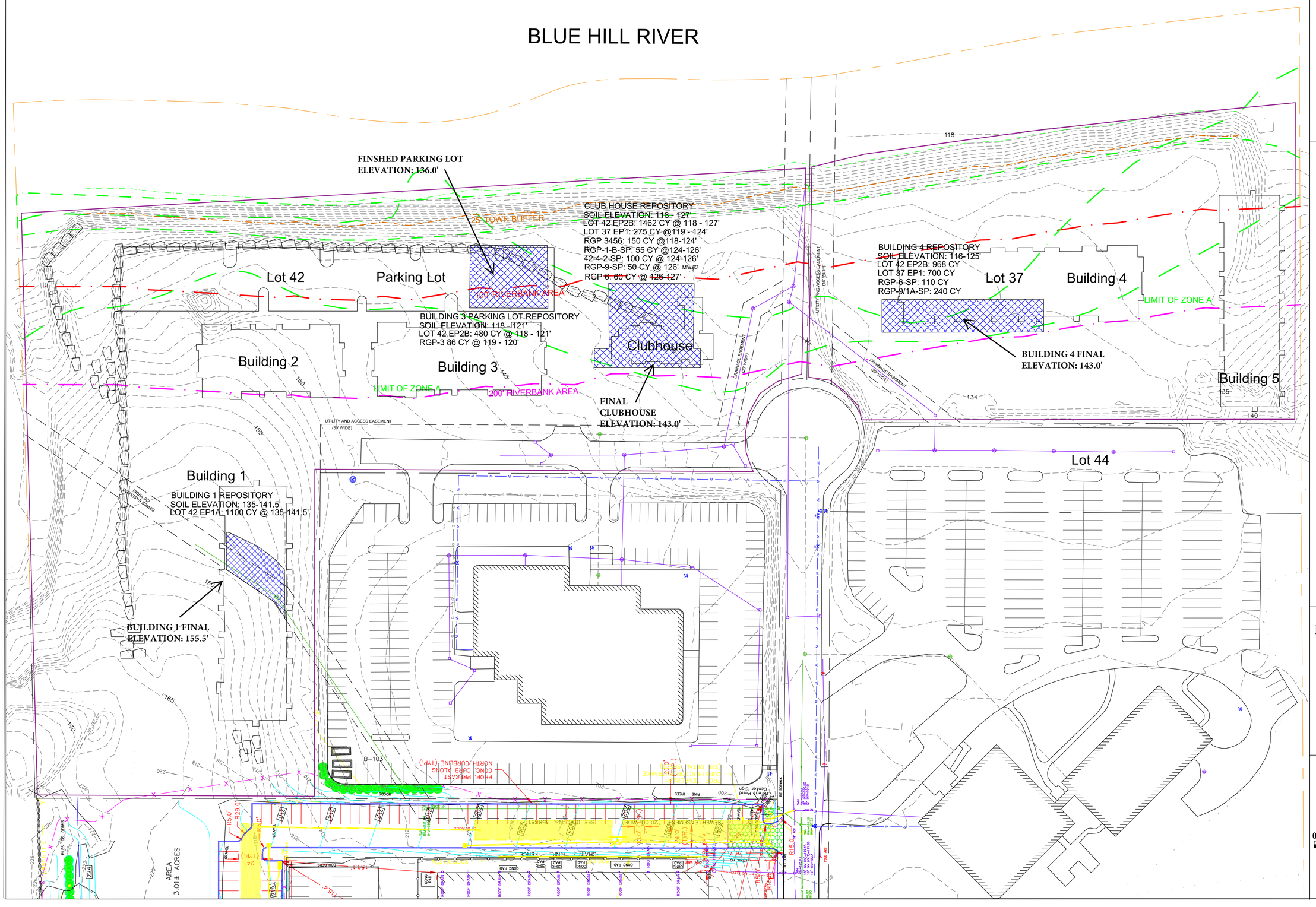
Figure 3B

SCALE
0 50 100
1 : 40'

N

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

Processed Soil Placement Lead, RGP, and/or PCB Soils

Limit of Watershed and Wetlands Protection District for Areas 1 and 2 Over Time

Site Plan, showing Permanent Locations and Elevations of Soil Repositories

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

GEC Project Number 1676-5190

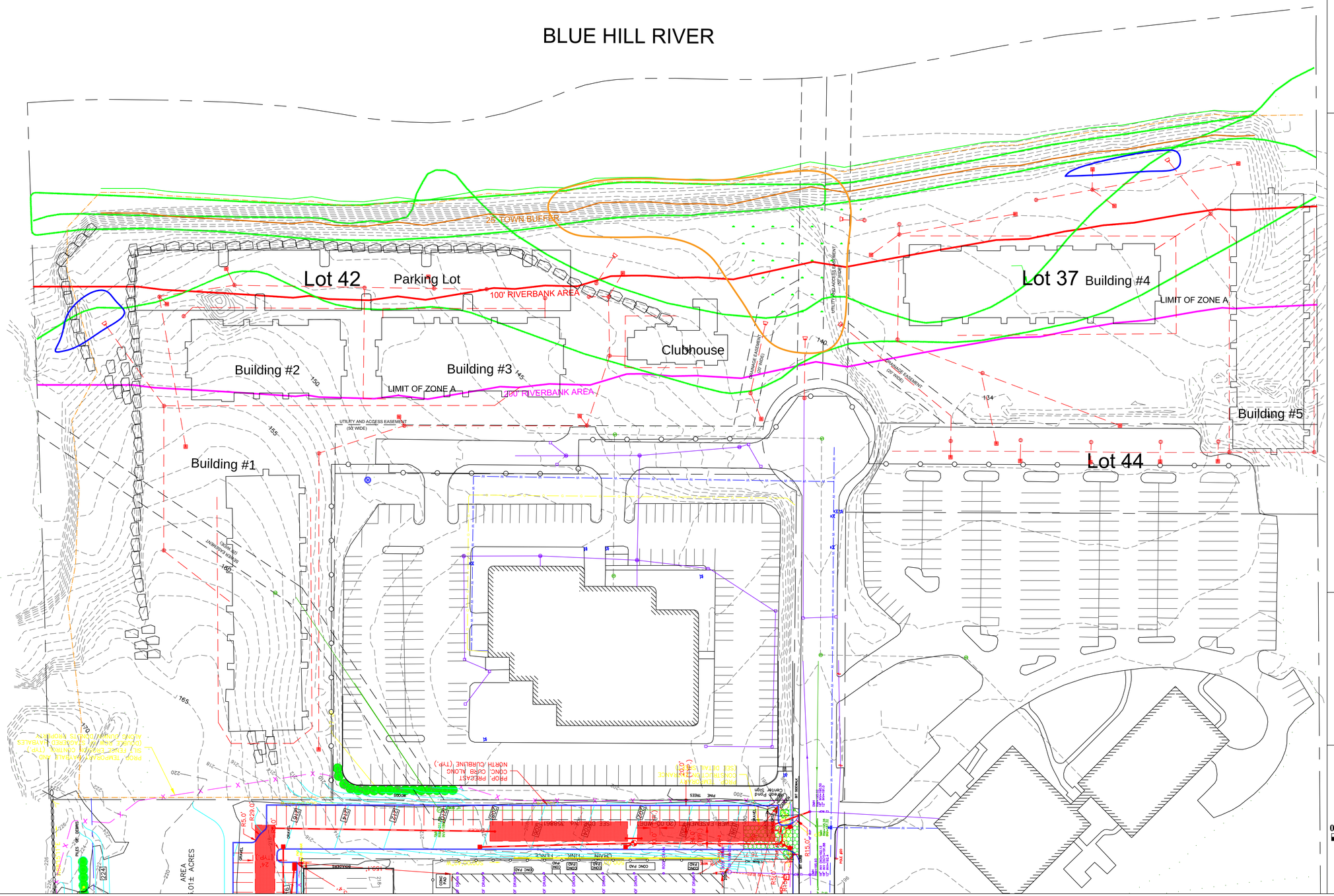
Figure 3C

SCALE
0 50 100
1 : 40'

N

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

- Site Buildings/Clubhouse
- Limit of Watershed and Wetlands Protection District for Areas 1 and 2 Over Time
- Constructed Wetland
- Rain Garden
- Stormwater Drainage System
- Drainage Manhole
- Catch Basin

Site Plan, showing Final Stormwater Drainage System, Constructed Wetland and Rain Gardens

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

GEC Project Number 1676-5190

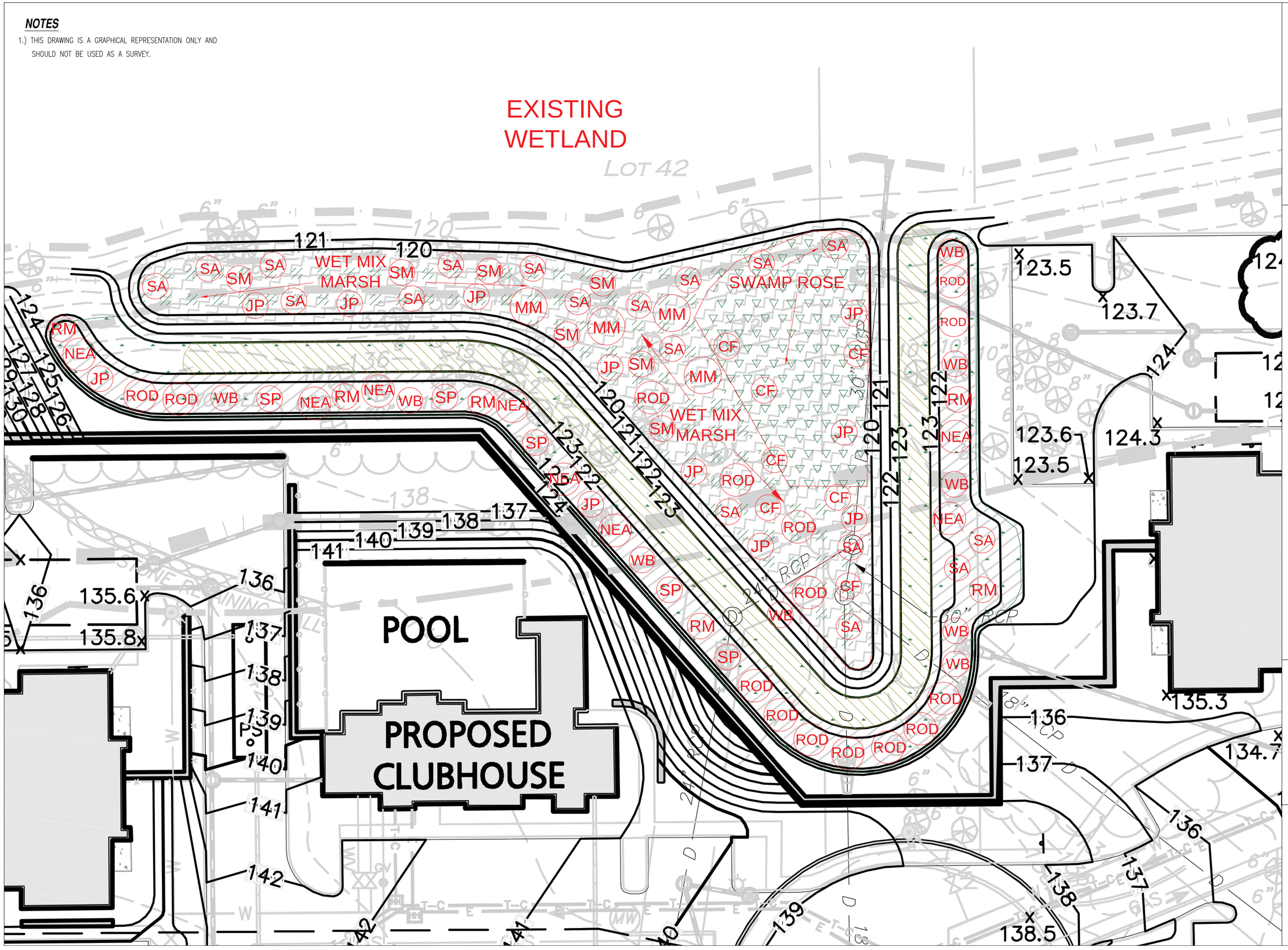
Figure 3D

SCALE
0 50 100

N

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

RM	Red Maple *Acer rubrum*
SA	Speckled Alder *Alnus incana*
JP	Joe-Pye Weed *Eupatorium maculatum*
WB	Winterberry *Ilex verticillata*
ROD	Red Osier Dogwood *Cornus sericea*
NEA	New England Aster *Aster novae-angliea*
CF	Cardinal Flower *Lobelia cardinalis*
▽	Swamp Rose *Rosa palustris*
SM	Swamp Milkweed *Asclepias incarnata*
SP	Sweet Pepperbush *Clethra alnifolia*
MM	Marsh Marigold *Caltha palustris*
//	Wet Marsh Mix (See Specifications)
⩘	Roadside Wet Mix (See Specifications)
\\	Erosion Control/Restoration Mix (See Specifications)

Constructed Wetland Planting Plan

Residences at Great Pond
Pacella Park Drive
Randolph, Massachusetts

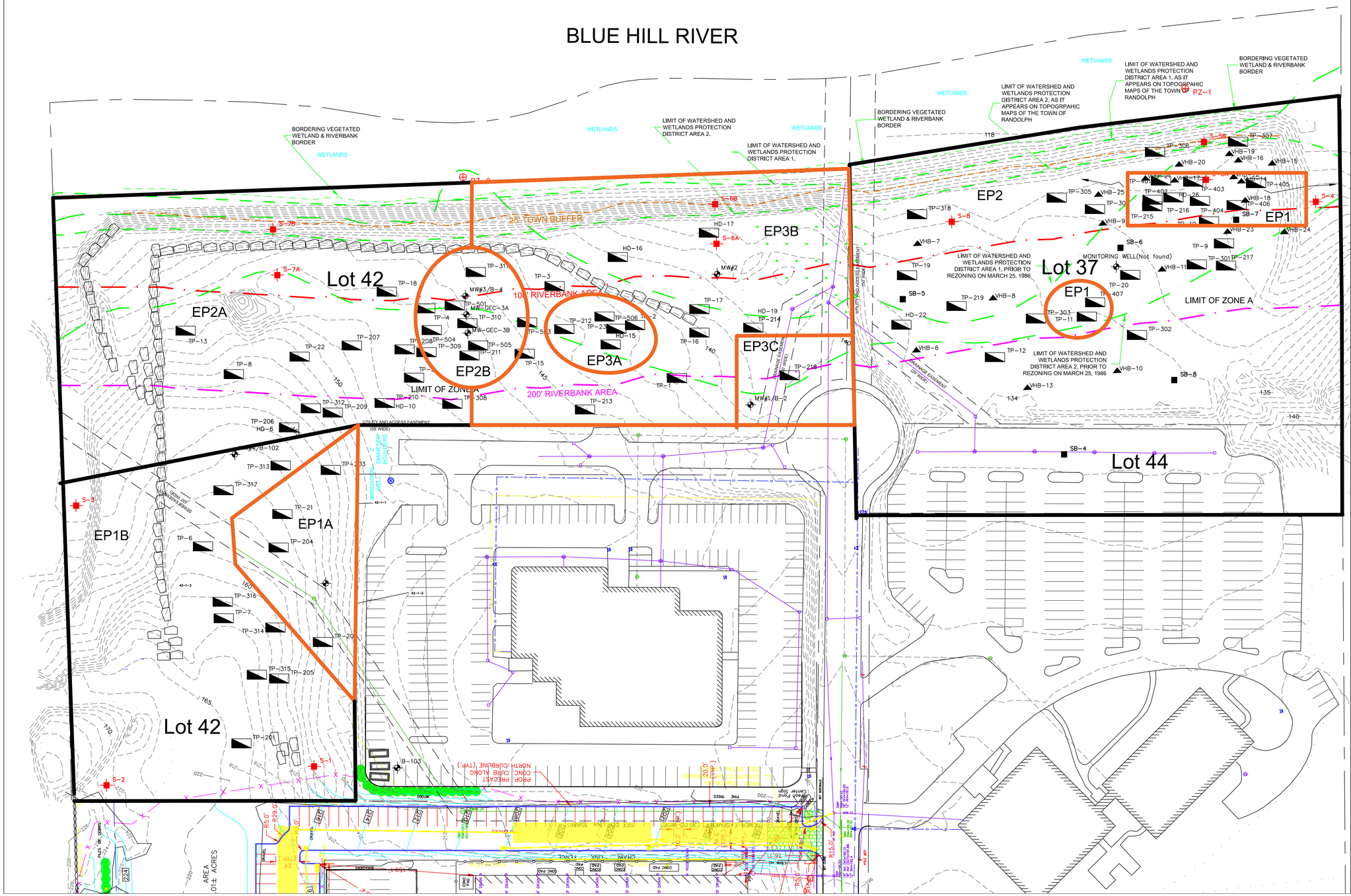
GEC Project Number 1676-7020
GEC File Number 070214A-Plants
Revised 7/7/17

FIGURE 3E

SCALE
1 : 30'

N

NOTES



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

TP#1–22	2011 GEC Test Pit Location
TP#201–217	2014 GEC Test Pit Location
SD–2	Sediment Sample Location
S–5A	Hand Boring Sample Location
VHB #6–25	2004 VHB Boring Location
SB #4–8	2004 Roberts Boring Location
	Monitoring Well
PZ–1	Piezometer
TP#301–318	Dec. 2014 GEC Test Pit Location
TP#401–506	April 2015 GEC Test Pit Location

Site Plan showing

Pre-Construction Exposure Points

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

GEC Project Number 1676-5190

Figure 4A

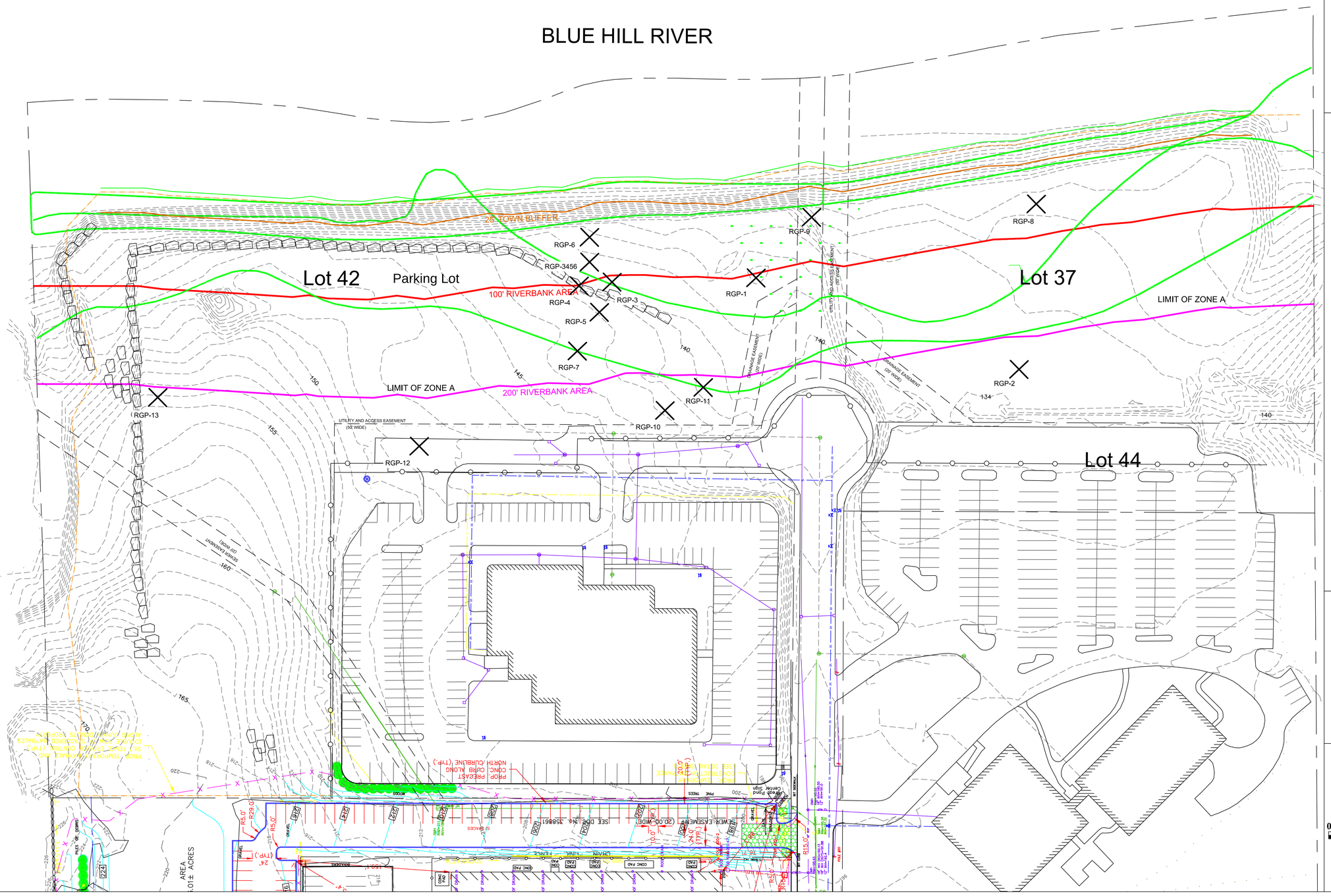
SCALE
0 50 100
1 : 40'

N

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.

2.) RGP-345 INCLUDES RGP-5 AND PORTIONS OF RGP-3, RGP-4, RGP-5, RGP-6, AND RGP-3456.



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

Limit of Watershed and Wetlands Protection District for Areas 1 and 2 Over Time

Pre-Excavation RGP Location

Site Plan, showing Pre-Excavation RGP Locations

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts

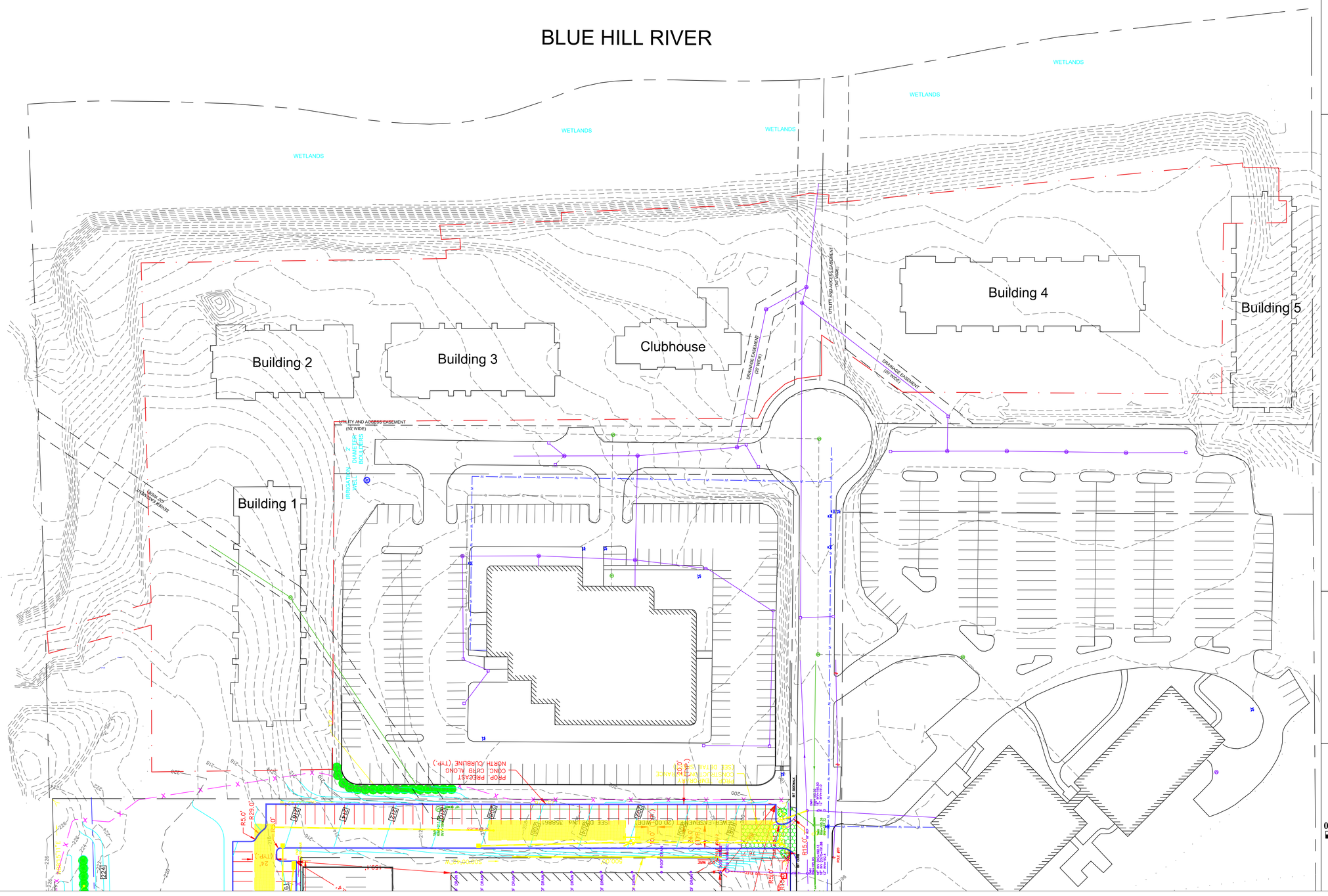
GEC Project Number 1676-5190

Figure 4B

SCALE
0 50 100

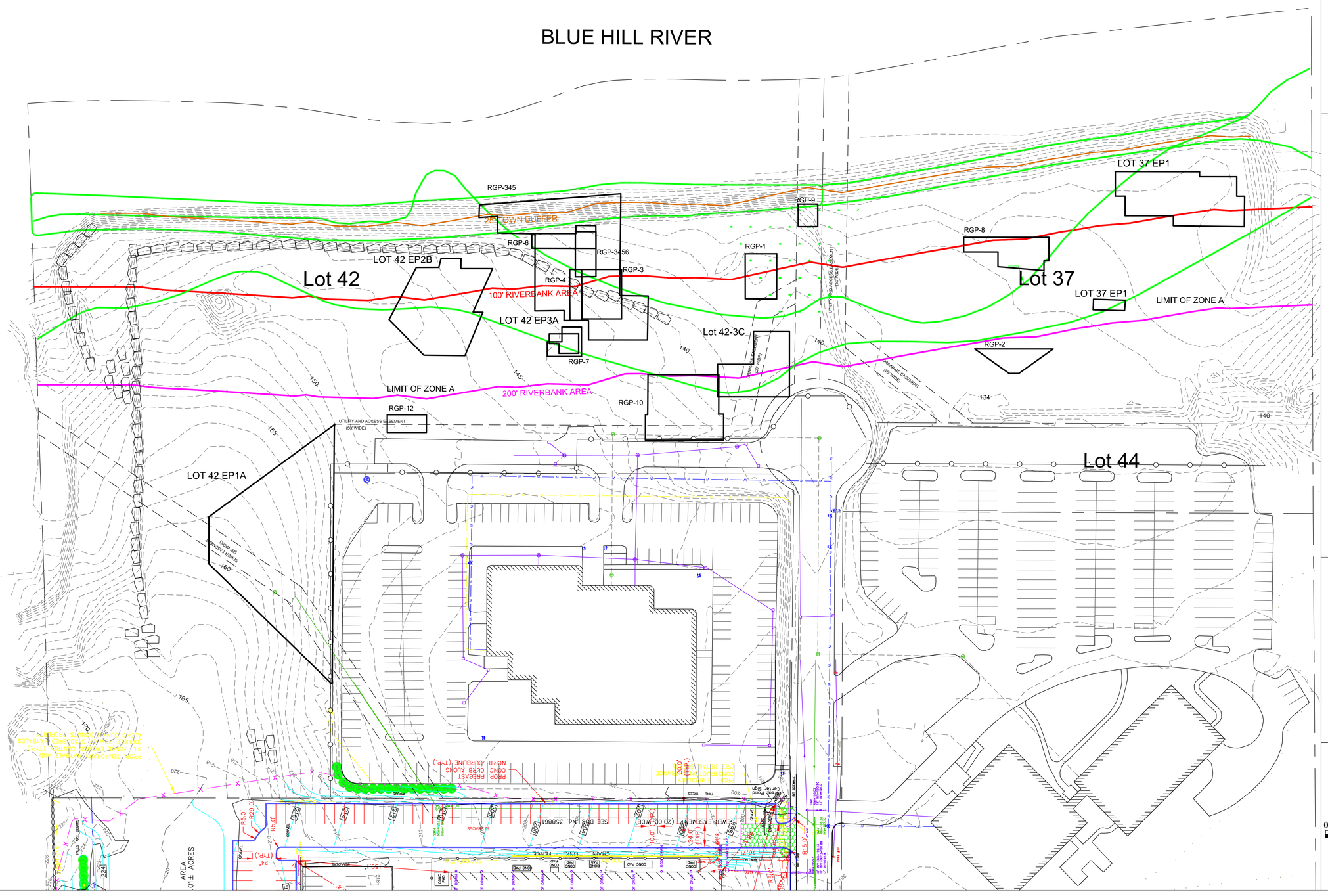
N

NOTES


BLUE HILL RIVER
WETLANDS
WETLANDS
WETLANDS
WETLANDS
WETLANDS
Building 1
Building 2
Building 3
Clubhouse
Building 4
Building 5
UTILITY AND ACCESS EASEMENT (50' WIDE)
DRAINAGE EASEMENT (10' WIDE)
DRAINAGE EASEMENT (20' WIDE)
UTILITY AND ACCESS EASEMENT (50' WIDE)
IRRIGATION WELL
2" DIAMETER BOX LAYERS
PROP. PRECAST CONC. CURB ALONG NORTH CUBBLINE (TYP.)
PROP. REMOVABLE CONSTRUCTION FENCE (SEE DETAIL)
FENCE DUE IN 7DEGRE (20.00' MIN)
R5.0'
R29.0'
R15.0'
R5.0'
R15.0'
R5.0'
R5.0'
R5

NOTES

1.) THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY.



Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

Remedial Area Excavation

Limit of Watershed and Wetlands Protection District for Areas 1 and 2 Over Time

Site Plan, showing Final Status of Remedial Area Excavations (Lot 37 EP1, Lot 42 EP1A, Lot 42 EP2B, Lot 42 EP3A, Lot 42 EP3C, RGP-1, RGP-2, RGP-3, RGP-4, RGP-345, RGP-6, RGP-3456, RGP-7, RGP-8, RGP-9, RGP-10 and RGP-12)

Lots 37, 42 & 44
Pacella Park Drive
Randolph, Massachusetts
GEC Project Number 1676-5190

Figure 4D

SCALE
0 50 100

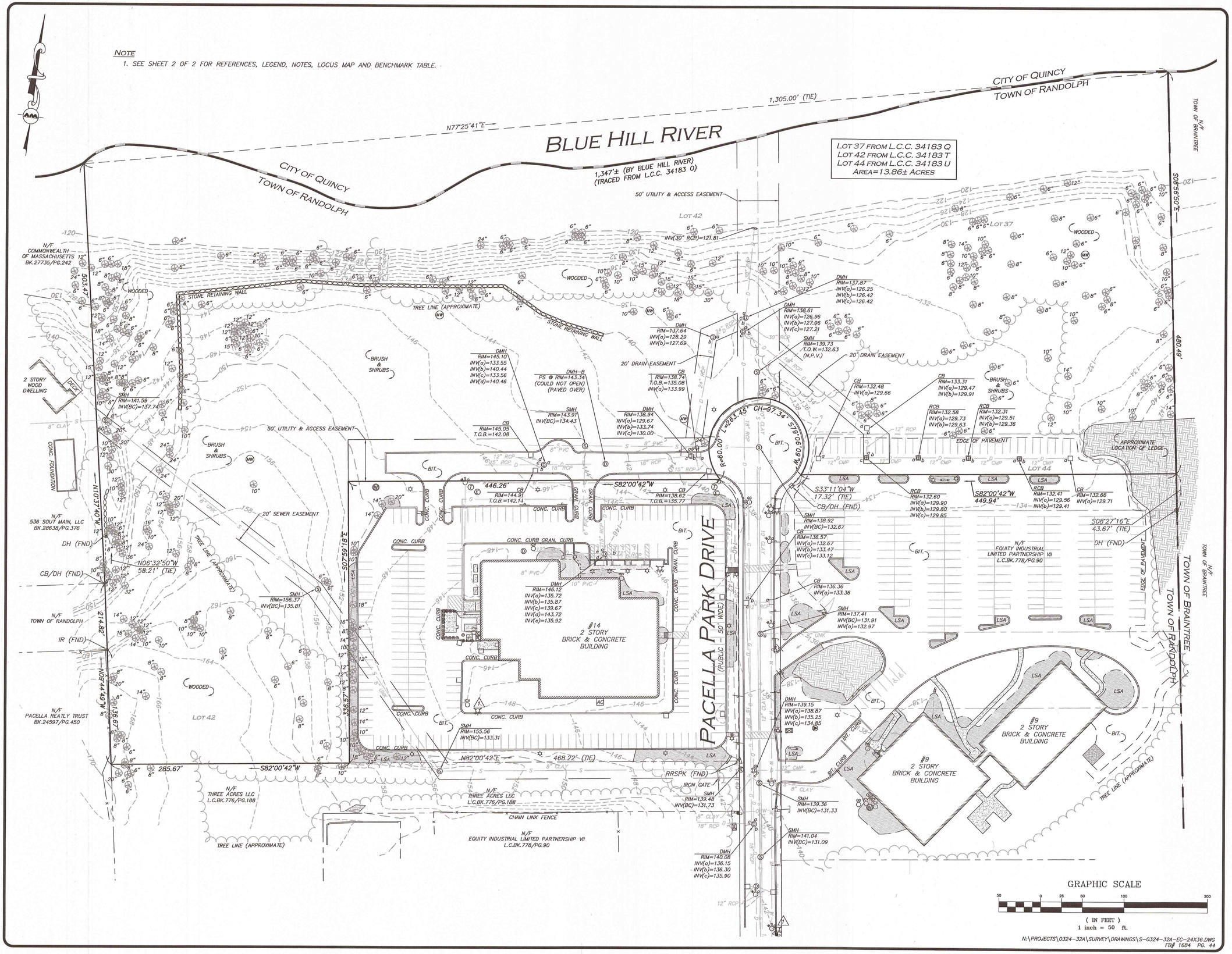
N

APPENDIX A

Allen & Major Associates, Inc. Drawing

NOTE

1. SEE SHEET 2 OF 2 FOR REFERENCES, LEGEND, NOTES, LOCUS MAP AND BENCHMARK TABLE.



N:\PROJECTS\0324-32A\SURVEY\DRAWINGS\S-0324-32A-EC-24X36.DWG
FB# 1684 PG. 44

FOR REGISTRY USE ONLY

WE HEREBY CERTIFY THAT:

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN MAY 14, 2012 AND FEBRUARY 11, 2013.

THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS DATED JANUARY 1, 1976 AND REVISED JANUARY 12, 1988.

ACCORDING TO DEEDS AND PLANS OF RECORD, THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES OF THE STREETS OR WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS AND WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

THE ABOVE CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS FOR THE RECORDING OF PLANS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN OF RANDOLPH AND TOWN OF BRAINTREE ASSESSOR'S INFORMATION.

THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.

COMMONWEALTH OF MASSACHUSETTS
KEVIN J. KIERNAN
No.40038
PROFESSIONAL LAND SURVEYOR

KJK 3/25/15

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1.	03/20/15	ISSUED FOR CONSTRUCTION (24x36)

APPLICANT\OWNER:

THE DOLBEN COMPANY, INC.
150 PRESIDENTIAL WAY, SUITE 220
WOBURN, MA 01801

PROJECT:

RESIDENCES AT GREAT POND

PACELLA PARK DRIVE
RANDOLPH, MA

PROJECT NO.	0324-32A	DATE:	05/22/14
SCALE:	1" = 50'	DWG. NAME:	S-0324-32A-EC
DRAFTED BY:	COB	CHECKED BY:	KJK

PREPARED BY:

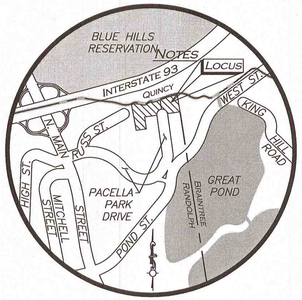
ALLEN & MAJOR ASSOCIATES, INC.
civil & structural engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
P.O. BOX 2118
WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

THIS DRAWING HAS BEEN PREPARED IN ELECTRONIC FORMAT. CLIENT/CLIENT'S REPRESENTATIVE OR CONSULTANT MAY BE PROVIDED COPIES OF DRAWINGS AND SPECIFICATIONS ON MAGNETIC MEDIA FOR HIS/HER INFORMATION AND USE FOR SPECIFIC APPLICATION TO THIS PROJECT. DUE TO THE POTENTIAL THAT THE MAGNETIC INFORMATION MAY BE MODIFIED UNINTENTIONALLY OR OTHERWISE, ALLEN & MAJOR ASSOCIATES, INC. MAY REMOVE ALL INDICATION OF THE DOCUMENT'S AUTHORSHIP ON THE MAGNETIC MEDIA. PRINTED REPRESENTATIONS OF THE DRAWINGS AND SPECIFICATIONS ISSUED SHALL BE THE ONLY RECORD COPIES OF ALLEN & MAJOR ASSOCIATES, INC.'S WORK PRODUCT.

DRAWING TITLE: EXISTING CONDITIONS

SHEET No. 1 OF 2

Copyright©2015 Allen & Major Associates, Inc.
All Rights Reserved



LOCUS MAP

(NOT TO SCALE)

LEGEND

DRILL HOLE (DH)		TOP OF BANK (ELEV=118.40)	
CONCRETE BOUND		100' TOP OF BANK BUFFER	
IRON ROD (IR)		200' TOP OF BANK BUFFER	
RAILROAD SPIKE (RRSPK)		EASEMENT LINE	
DRAIN MANHOLE (DMH)		2' CONTOUR	146
DRAIN MANHOLE-BURIED (DMH-B)		10' CONTOUR	140
SEWER MANHOLE (SMH)		PROPERTY LINE	
ELECTRIC MANHOLE (EMH)		ABUTTERS LINE	
TELEPHONE MANHOLE (TMH)		TOWN LINE	
CATCH BASIN (CB)		STONE WALL	
ROUND CATCH BASIN (RCB)		STONE RETAINING WALL	
UTILITY POLE W/RISER		TREE LINE	
UTILITY POLE W/LIGHT		EDGE OF PAVEMENT	
GUY WIRE		EDGE OF BRICK	
FIRE HYDRANT		EDGE OF RIVER	
FIRE STANDPIPE		CURB	
WATER GATE		CHAIN LINK FENCE	x
GAS GATE		WATER LINE	W
BOLLARD		SEWER LINE	S
CLEANOUT		DRAIN LINE	D
INVERT		GAS LINE	G
LIGHT		OVERHEAD WIRES	OHW
SIGN		BITUMINOUS	BIT.
SIGN		CONCRETE	CONC.
TREE		GRANITE	GRAN.
TRANSFORMER		BOTTOM CENTER	(BC)
WELL		INVERT	INV
MONITOR WELL		REINFORCED CONCRETE PIPE	RCP
FIRE ALARM BOX		POLYVINYL CHLORIDE PIPE	PVC
AIR CONDITIONING UNIT		CORRUGATED METAL PIPE	CMP
FLAG POLE		ASBESTOS PIPE	ASB
GAS METER		TOP OF WATER	T.O.W.
ELECTRIC METER		TOP OF BELL	T.O.B.
HANDICAPPED PARKING SPACE		NO PIPES VISIBLE	N.P.V.
IRRIGATION CONTROL VALVE		UNKNOWN	UNK
POSITION INDICATOR VALVE		SPOT GRADE ON PAVEMENT	PS
PAINTED ARROW		CONC. BOUND W/DRILL HOLE	CB/DH
PARKING SPACE COUNT	16	FOUND	FND
SPOT GRADE	×110.6	NOW OR FORMERLY	N/F
CONCRETE		BOOK	BK.
LANDSCAPED AREA (LSA)		PAGE	PG.
BRICK		CERTIFICATE OF TITLE	COT
LEDGE		LAND COURT	L.C.
BUILDING		LAND COURT CASE	L.C.C.

BENCHMARK SUMMARY

TBM #	DESCRIPTION	ELEV.
1	LEFT FLANGE BOLT OVER HYDRANT OPENING	148.93

LOCUS REFERENCES

–LOT 37 FROM L.C.C. 34183 Q
–COT# 167962
–LOT 42 FROM L.C.C. 34183 T
–COT# 167963
–LOT 44 FROM L.C.C. 34183 U
–COT# 167960

NOTES

1. NORTH ARROW TAKEN FROM L.C.C. 34183 O.
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM NORFOLK COUNTY REGISTRY OF DEEDS IN DEDHAM, MA.
3. VERTICAL DATUM IS NAVD 88.
4. CONTOUR INTERVAL IS TWO FEET (2').
5. ALL CURBING SHOWN HEREON IS BIT. CURB UNLESS OTHERWISE NOTED.

PLAN REFERENCES

–L.C.C. 34183 A THRU U
–PLAN BOOK 71, PLAN 3443
–L.C.C. 37160 A–1

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

N:\PROJECTS\0324–32A\SURVEY\DRAWINGS\S–0324–32A–EC–24X36.DWG
FB# 1684 PG. 44

FOR REGISTRY USE ONLY

WE HEREBY CERTIFY THAT:

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN MAY 14, 2012 AND FEBRUARY 11, 2013.

THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS DATED JANUARY 1, 1976 AND REVISED JANUARY 12, 1988.

ACCORDING TO DEEDS AND PLANS OF RECORD, THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES OF THE STREETS OR WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS AND WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

THE ABOVE CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS FOR THE RECORDING OF PLANS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT TOWN OF RANDOLPH AND TOWN OF BRAINTREE ASSESSOR'S INFORMATION.

THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.

COMMONWEALTH OF MASSACHUSETTS
KEVIN J. KIERNAN
No.40038
PROFESSIONAL LAND SURVEYOR

KJK 8/23/15

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1.	03/20/15	ISSUED FOR CONSTRUCTION (24x36)

APPLICANT\OWNER:

THE DOLBEN COMPANY, INC.
150 PRESIDENTIAL WAY, SUITE 220
WOBURN, MA 01801

PROJECT:

RESIDENCES AT GREAT POND

PACELLA PARK DRIVE
RANDOLPH, MA

PROJECT NO.	0324-32A	DATE:	05/22/14
SCALE:	1" = 50'	DWG. NAME:	S-0324-32A-EC
DRAFTED BY:	COB	CHECKED BY:	KJK

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil & structural engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY
P.O. BOX 2118
WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

THIS DRAWING HAS BEEN PREPARED IN ELECTRONIC FORMAT. CLIENT/CLIENT'S REPRESENTATIVE OR CONSULTANT MAY BE PROVIDED COPIES OF DRAWINGS AND SPECIFICATIONS ON MAGNETIC MEDIA FOR HIS/HER INFORMATION AND USE FOR SPECIFIC APPLICATION TO THIS PROJECT. DUE TO THE POTENTIAL THAT THE MAGNETIC INFORMATION MAY BE MODIFIED UNINTENTIONALLY OR OTHERWISE, ALLEN & MAJOR ASSOCIATES, INC. MAY REMOVE ALL INDICATION OF THE DOCUMENT'S AUTHORSHIP ON THE MAGNETIC MEDIA. PRINTED REPRESENTATIONS OF THE DRAWINGS AND SPECIFICATIONS ISSUED SHALL BE THE ONLY RECORD COPIES OF ALLEN & MAJOR ASSOCIATES, INC.'S WORK PRODUCT.

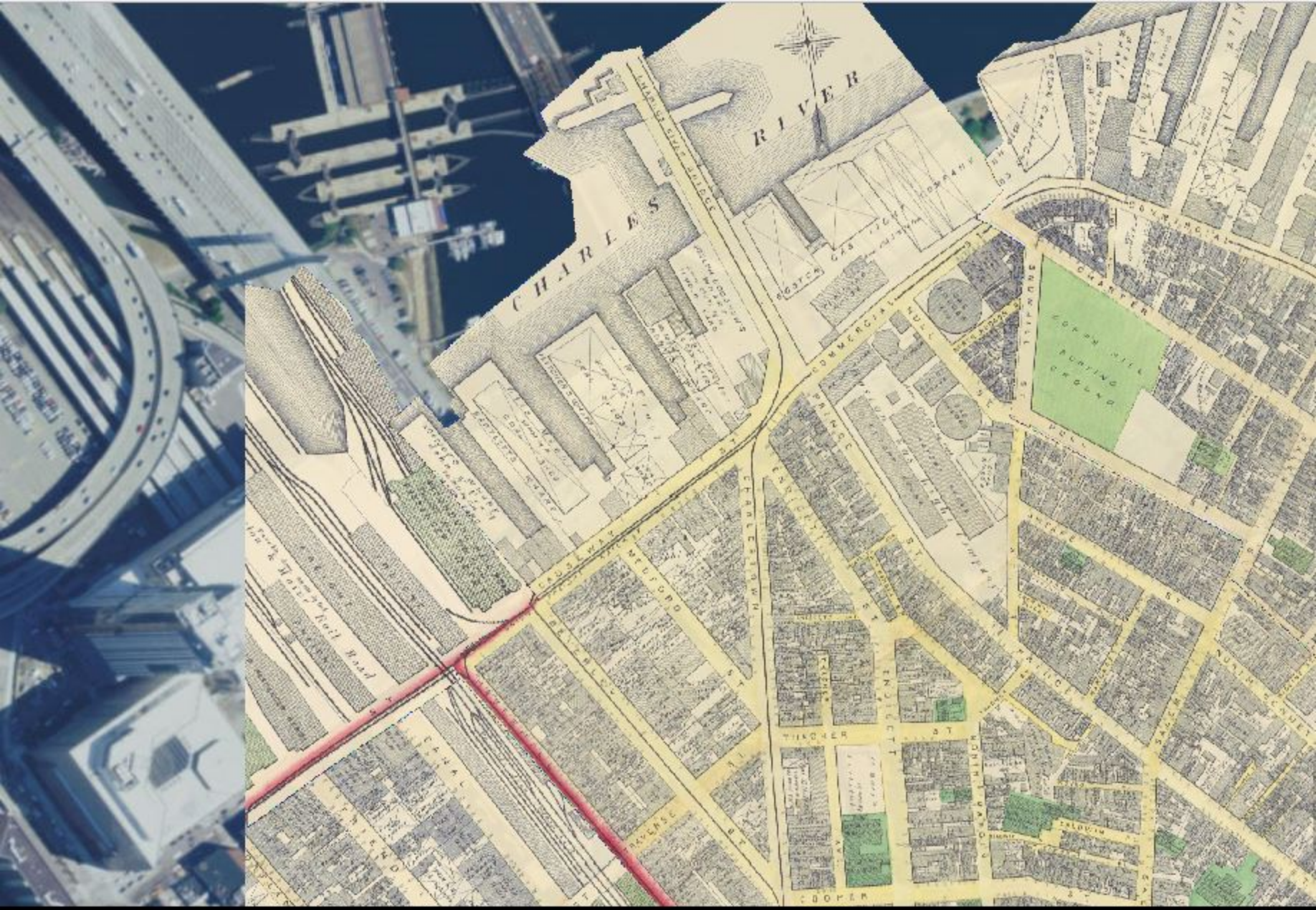
DRAWING TITLE: EXISTING CONDITIONS

SHEET No. 2 OF 2

Copyright©2015 Allen & Major Associates, Inc.
All Rights Reserved

APPENDIX B

Historic Atlases showing Vicinity of North Station, Boston



2017 1874

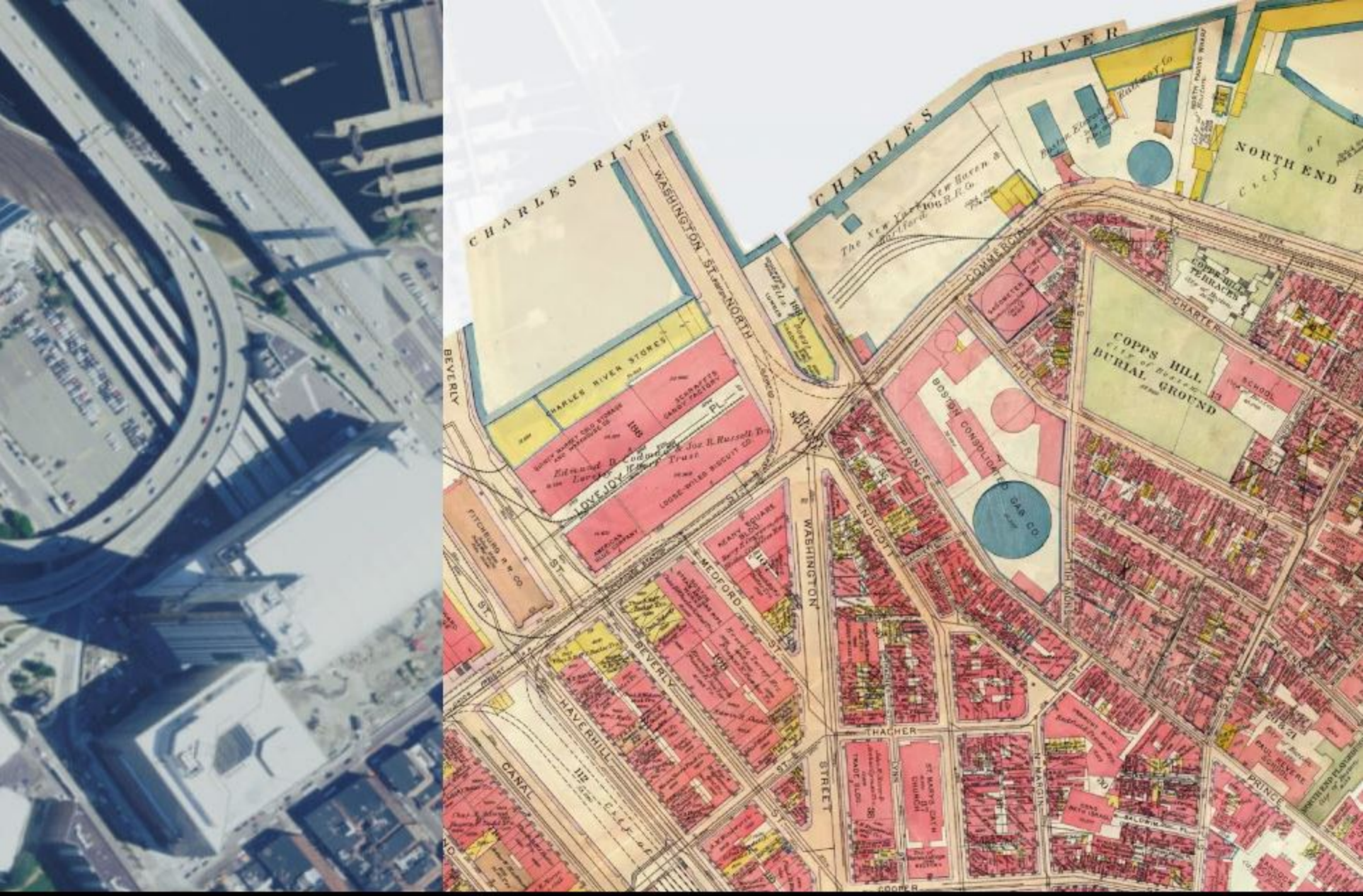
nagery [ESRI]

1874 Boston Hopkins Atlas []

Base ESRI Imagery [ESRI]

1890 Boston Bromley Atlas [Bill Warner Collection]

CHARLES
RIVER
CHARLES
RIVER
NORTH END
CHARLESTOWN BRIDGE
COMMERCIAL
COPPS HILL
City of Boston
BURIAL GROUND
CHARTER
PRINCE
ENDICOTT
WASHINGTON
STREET
THACHER
SHARP
BEVERLY
HAVERHILL
GANAL
FRIEND
BEDFORD
COVEJOYS
BRIDGE
ST
BEVERLY
HAVERHILL
ST
ST
ST

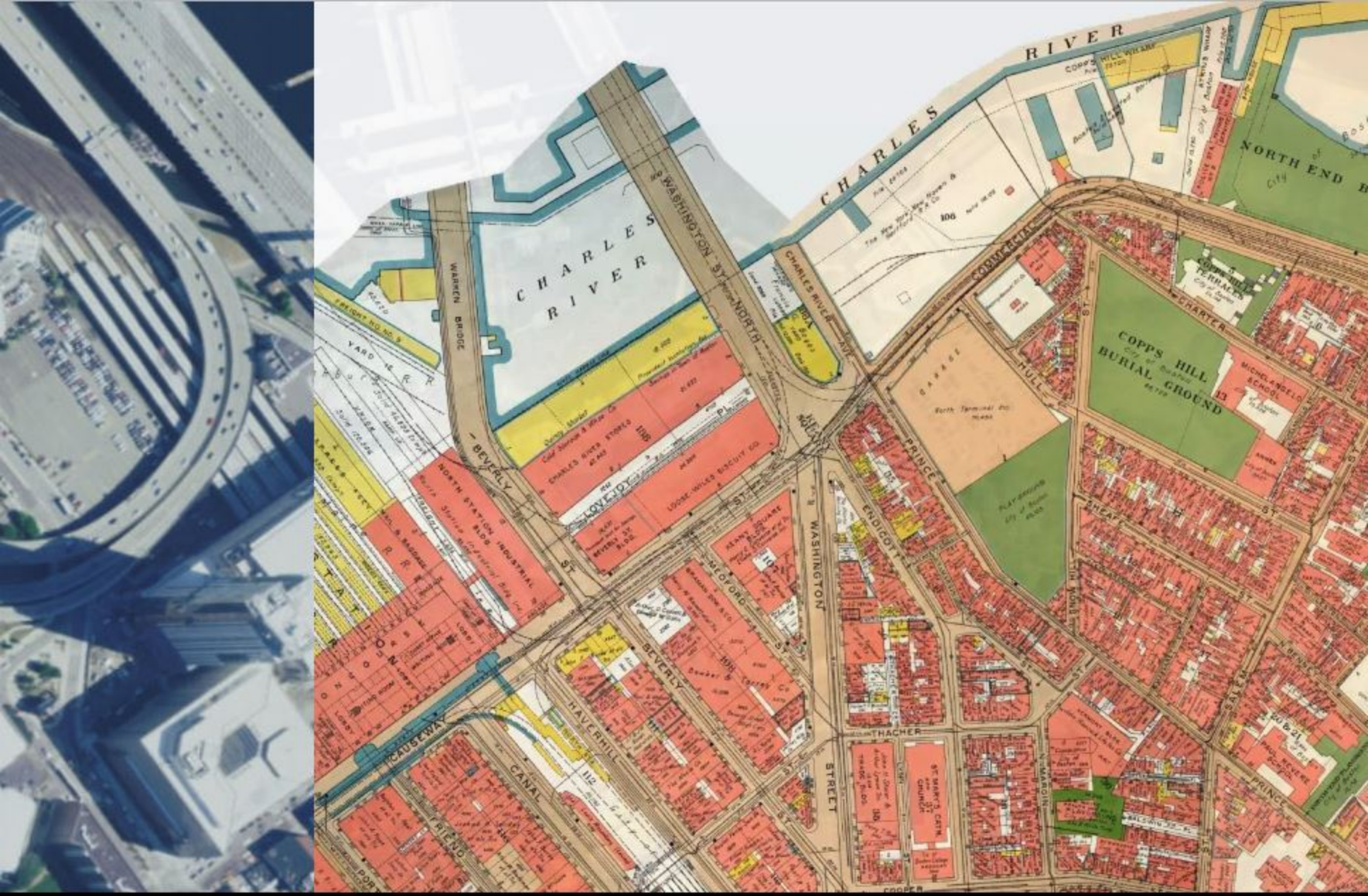


2017 1917

ESRI Imagery [ESRI]

1917 Boston Bromley Atlas [Norman Levinthal Map Center]

2017
1928
CHARLES RIVER
CHARLES RIVER
WARREN BRIDGE
WASHINGTON ST. from NORTH
CHARLES RIVER AVE
The New York New Haven & Hartford R.R. Co
COPPS HILL WHARF
NORTH END
COPPS HILL TERRACES
COPPS HILL BURIAL GROUND
GARAGE
North Terminal Corporation
BOSTON CONSOLIDATED GAS CO
NORTH STATION TERMINAL
B. & M. Terminal Bldg
LOVEJOY
WEDFORD
BEVERLY
HAVERHILL
CANAL
FRIEND
AUDLEWAY
WASHINGTON STREET
THACHER
ENDICOTT
PRINCE
HULL
CHARTER
SHEAFE
GALLUP
HARGIN
BENNET
ST. MARY'S CATH. CHURCH
HIGHLANDELL SCHOOL
FREIGHT RD. 9
YARD 10
1928 Boston Bromley Atlas Cropped []
RI Imagery [ESRI]


2017
1938
CHARLES RIVER
CHARLES RIVER
WARREN BRIDGE
WASHINGTON ST
NORTH
BEVERLY
CAUSEWAY
CANAL
HAVERHILL
BEDFORD
THACHER
STREET
WASHINGTON
ENDICOTT
PRINCE
HULL
CORNELIA
CHARTER
COPPS HILL BURIAL GROUND
NORTH END
SALEM
COOPER
NORTH STATION INDUSTRIAL BLDG
LOVEJOY
YARD
GARAGE
PLAYGROUND
ATLANTIC AVE
CHARLES RIVER AVE
MICHELANGELO SCHOOL
ST MARY'S CATH CHURCH
1938 Boston Bromley Atlas [Norman Levinthal Map Center]
ESRI Imagery [ESRI]

APPENDIX C

Data Validation Tables

Table C-1.1
Summary of Laboratory Reports for Lead Remediation

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date(s)	Environmental Media	Chain of Custody?	Field Notes Available	GEC File Number
Con-Test	9/3/2015	15I0044	Yes	Yes	8/31/2015 - 9/1/2015	Soil	Yes	Yes	L01
Con-Test	9/8/2015	15I0178	Yes	Yes	9/1/2016 - 9/3/2015	Soil	Yes	Yes	L02
Con-Test	9/8/2015	15I0169	Yes	Yes	8/31/2015 - 9/1/2015	Soil	Yes	Yes	L03
Con-Test	9/10/2015	15I0329	Yes	Yes	9/1/2016 - 9/3/2015	Soil	Yes	Yes	L04
Con-Test	9/11/2015	15I0375	Yes	Yes	9/8/2015 - 9/9/2015	Soil	Yes	Yes	L05
Con-Test	9/14/2015	15I0505	Yes	Yes	9/9/2015 - 9/10/2015	Soil	Yes	Yes	L06
Con-Test	9/17/2015	15I0506	Yes	Yes	9/8/2015 - 9/9/2015	Soil	Yes	Yes	L07
Con-Test	9/17/2015	15I0630	Yes	Yes	9/11/2015, 9/14/2015	Soil	Yes	Yes	L08
Con-Test	9/22/2015	15I0812	Yes	Yes	9/11/2015, 9/14/2015	Soil	Yes	Yes	L09
Con-Test	9/23/2015	15I0882	Yes	Yes	9/9/2015 - 9/10/2015	Soil	Yes	Yes	L10
Con-Test	9/21/2015	15I0783	Yes	Yes	9/15/2015	Soil	Yes	Yes	L11
Con-Test	9/22/2015	15I0865	Yes	Yes	9/17/2015 - 9/18/2015	Soil	Yes	Yes	L12
Con-Test	9/23/2015	15I0888	Yes	Yes	9/15/2015	Soil	Yes	Yes	L13
Con-Test	9/24/2015	15I0932	Yes	Yes	9/17/2015 - 9/18/2015	Soil	Yes	Yes	L14
Con-Test	9/24/2015	15I0935	Yes	Yes	9/21/2015	Soil	Yes	Yes	L15
Con-Test	9/29/2015	15I1047	Yes	Yes	9/21/2015	Soil	Yes	Yes	L16
Con-Test	9/30/2015	15I1221	Yes	Yes	9/25/2015, 9/28/2015	Soil	Yes	Yes	L17
Con-Test	10/1/2015	15I1249	Yes	Yes	9/28/2015	Soil	Yes	Yes	L18
Con-Test	10/2/2015	15I1339	Yes	Yes	9/25/2015, 9/28/2015	Soil	Yes	Yes	L19
Con-Test	10/5/2015	15J0069	Yes	Yes	10/1/2015	Soil	Yes	Yes	L20
Con-Test	10/8/2015	15J0281	Yes	Yes	10/6/2015	Soil	Yes	Yes	L21
Con-Test	10/14/2015	15J0535	Yes	Yes	10/9/2015	Soil	Yes	Yes	L22
Con-Test	10/15/2015	15J0539	Yes	Yes	10/1/2015	Soil	Yes	Yes	L23
Con-Test	10/16/2015	15J0593	Yes	Yes	10/9/2015	Soil	Yes	Yes	L24
Con-Test	10/21/2015	15J0841	Yes	Yes	10/19/2015	Soil	Yes	Yes	L25
Con-Test	11/18/2015	15J0957	Yes	Yes	10/19/2015	Soil	Yes	Yes	L28
Con-Test	4/12/2016	16D0351	Yes	Yes	4/8/2016	Soil	Yes	Yes	L29
Con-Test	4/14/2016	16D0579	Yes	Yes	4/13/2016	Soil	Yes	Yes	L30
Con-Test	4/15/2016	16D0642	Yes	Yes	4/14/2016	Soil	Yes	Yes	L31
Con-Test	4/18/2016	16D0660	Yes	Yes	4/13/2016	Soil	Yes	Yes	L32
Con-Test	4/19/2016	16D0801	Yes	Yes	4/18/2016	Soil	Yes	Yes	L33
Con-Test	4/21/2016	16D0862	Yes	Yes	4/18/2016	Soil	Yes	Yes	L34
Con-Test	5/23/2016	16E0855	Yes	Yes	5/19/2016	Soil	Yes	Yes	L35
Con-Test	5/24/2016	16E0943	Yes	Yes	5/20/2016	Soil	Yes	Yes	L36
Con-Test	5/25/2016	16E0981	Yes	No	5/23/2016	Soil	Yes	Yes	L37
Con-Test	6/7/2016	16F0183	Yes	Yes	6/3/2016	Soil	Yes	Yes	L38
Con-Test	6/9/2016	16F0444	Yes	Yes	6/8/2016	Soil	Yes	Yes	L39
Con-Test	6/10/2016	16F0543	Yes	Yes	6/9/2016	Soil	Yes	Yes	L40
Con-Test	6/14/2016	16F0562	Yes	Yes	6/8/2016	Soil	Yes	Yes	L41
Con-Test	6/15/2016	16F0640	Yes	Yes	6/13/2016	Soil	Yes	Yes	L42
Con-Test	6/16/2016	16F0679	Yes	Yes	6/9/2016	Soil	Yes	Yes	L43
Con-Test	6/17/2016	16F0799	Yes	Yes	6/15/2016	Soil	Yes	Yes	L45
Con-Test	6/20/2016	16F0848	No - TCLP Pb	Not Applicable	6/14/2016	Soil	Yes	Yes	L46
Con-Test	6/22/2016	16F1022	Yes	Yes	6/20/2016	Soil	Yes	Yes	L47
Con-Test	6/22/2016	16F1060	Yes	Yes	6/21/2016	Soil	Yes	Yes	L48
Con-Test	7/8/2016	16G0155	Yes	Yes	7/6/2016	Soil	Yes	Yes	L49
Con-Test	7/26/2016	16G1022	Yes	Yes	7/22/2016	Soil	Yes	No	L50

Table C-1.2
Completion of Sampling Plan(s), Consistency with Sampling Plan(s) and Consistency with Standard Operating Procedures

Actual or Proposed Sample	Issue 1: Work not Completed as Planned	Issue 2: Deviations from Sampling Plan or SOP
	None identified	None identified

Table C-1.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	Lead SW-846 6010C	TCLP Lead SW-846 1311	SVOCs SW-846 8270D	RCRA Metals SW-846 7470A	TCLP RCRA Metals SW-846 7471B	MADEP-EPH-04-1.1	SW-846 8081B	SW-846 8082A	TPH SW-846 8100 Modified	SW-846 8260C
Con-Test	9/3/2015	15I0044	37-1-1N to 37-1-4S	8/31/2015 - 9/1/2015	Soil	X									
Con-Test	9/8/2015	15I0178	37-1-7 to 37-1-8S	9/1/2015 - 9/3/15	Soil	X									
Con-Test	9/8/2015	15I0169	37-1-1N to 37-1-4S	8/31/2015	Soil		X								
Con-Test	9/10/2015	15I0329	37-1-7 to 37-1-5	9/1/2015 - 9/2/15	Soil		X								
Con-Test	9/11/2015	15I0375	37-1-4EA to 37-1-1WB	9/8/2015 - 9/9/2015	Soil	X									
Con-Test	9/14/2015	15I0505		9/9/2015 - 9/10/2015	Soil	X									
Con-Test	9/17/2015	15I0506	37-1-1NA to 37-1-WB	9/8/2015 - 9/9/2015	Soil		X								
Con-Test	9/17/2015	15I0630	37-1-5SA to 42-2-7C	9/11/2015, 9/14/2015	Soil	X									
Con-Test	9/22/2015	15I0812	37-1-2NB to 42-2-7B	9/11/2015, 9/14/2015	Soil		X								
Con-Test	9/23/2015	15I0882	37-1-1B	9/9/2015 - 9/10/2015	Soil		X								
Con-Test	9/21/2015	15I0783	42-2-5	9/15/2015	Soil	X									
Con-Test	9/22/2015	15I0865	42-2-6 to 42-2-2	9/17/2015 - 9/18/2015	Soil	X									
Con-Test	9/23/2015	15I0888	42-2-5	9/15/2015	Soil		X								
Con-Test	9/24/2015	15I0932	42-2-6 to 42-2-2	9/17/2015 - 9/18/2015	Soil		X								
Con-Test	9/24/2015	15I0935	42-2-3 to 42-2-4	9/21/2015	Soil	X									
Con-Test	9/29/2015	15I1047	42-2-3 to 42-2-4	9/21/2015	Soil		X								
Con-Test	9/30/2015	15I1221	42-2-7BA 0-15 to 42-2-6 6-15	9/25/2015, 9/28/2015	Soil	X									
Con-Test	10/1/2015	15I1249	42-2-2 0-6 to 37-1BA	9/28/2015	Soil	X									
Con-Test	10/2/2015	15I1339	42-2-6 6-15	9/28/2015	Soil		X								
Con-Test	10/5/2015	15J0069	42-2-3 0-6 to 42-2-4 6-15	10/1/2015	Soil	X									
Con-Test	10/8/2015	15J0281	42-2-6A 6-9 to 42-3-2	10/6/2015	Soil	X									
Con-Test	10/14/2015	15J0535	42-2-6B 6-15' to 42-2-4B 6-15'	10/9/2015	Soil	X									
Con-Test	10/15/2015	15J0539	42-2-3 6-15' to 42-2-4 6-15'	10/1/2015	Soil		X								
Con-Test	10/16/2015	15J0593	42-2-6B 6-15' to 42-2-4B 6-15'	10/9/2015	Soil	X									
Con-Test	10/21/2015	15J0841	42-2-6C 6-15' to 42-2-4C2 6-15'	10/19/2015	Soil	X									
Con-Test	10/26/2015	15J1057	42-2-6D1 to 42-2-4D2	10/22/2015	Soil	X									
Con-Test	11/12/2015	15K0473	42-2-51 to 42-2-7-BC	11/10/2015	Soil	X									
Con-Test	11/18/2015	15J0957	42-2-6C 6-15' to 42-2-4C2 6-15'	10/19/2015	Soil		X								
Con-Test	4/12/2016	16D0351	42-4-6S	4/8/2016	Soil			X							
			42-2-EP	4/8/2016	Soil	X	X								
Con-Test	4/14/2016	16D0579	42-2-WP-SW1 to 42-2-WP-B2	4/13/2016	Soil	X									
Con-Test	4/15/2016	16D0642	42-2-EP-B1 to 42-2-EP-SW1	4/14/2016	Soil	X									
Con-Test	4/18/2016	16D0660	42-2-WP-B2	4/13/2016	Soil		X								
Con-Test	4/19/2016	16D0801	42-2-WP-B3 to 42-2-WP-SW2	4/18/2016	Soil	X									

Table C-1.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	Lead SW-846 6010C	TCLP Lead SW-846 1311	SVOCs SW-846 8270D	RCRA Metals SW-846 7470A	TCLP RCRA Metals SW-846 7471B	MADEP-EPH-04-1.1	SW-846 8081B	SW-846 8082A	TPH SW-846 8100 Modified	SW-846 8260C
Con-Test	4/21/2016	16D0862	42-2-WP-SW2	4/18/2016	Soil		X								
Con-Test	5/23/2016	16E0855	42-2-5B to 42-2-7BA2	5/19/2016	Soil	X	X								
Con-Test	5/24/2016	16E0943	42-2-2B2 to 42-2-6 SW1	5/20/2016	Soil	X	X								
Con-Test	5/25/2016	16E0981	42-2-6B1	5/23/2016	Soil	X	X								
Con-Test	6/7/2016	16F0183	42-2-7BA2	6/3/2016	Soil				X	X					
			42-2-6B1	6/3/2016	Soil				X	X					
			42-2-WP-B2	6/3/2016	Soil				X	X					
			42-2-5B	6/3/2016	Soil				X	X					
			RGP-10-B2	6/3/2016	Soil						X				
Con-Test	6/9/2016	16F0444	42-2-7BA3 to 42-2-5B2	6/8/2016	Soil	X									
Con-Test	6/10/2016	16F0543	42-2-7BB2 to 42-2-5-3	6/9/2016	Soil	X									
Con-Test	6/14/2016	16F0562	42-2-6B2	6/8/2016	Soil		X								
Con-Test	6/15/2016	16F0640	42-2-7BB3	6/13/2016	Soil	X									
			RGP-3345-B15	6/13/2016	Soil						X				
			RPG-3345-S4	6/13/2016	Soil						X				
Con-Test	6/16/2016	16F0679	42-2-7BB2	6/9/2016	Soil		X								
Con-Test	6/16/2016	16F0702	42-2-6B3	6/14/2016	Soil	X									
Con-Test	6/17/2016	16F0799	42-2-SP257	6/15/2016	Soil	X	X								
Con-Test	6/20/2016	16F0848	42-2-6B3	6/14/2016	Soil		X								
Con-Test	6/22/2016	16F1022	42-2-SP7B	6/20/2016	Soil	X	X								
			RGP-345-W4	6/20/2016	Soil						X	X			
Con-Test	6/22/2016	16F1060	42-2-6B4	6/21/2016	Soil	X									
Con-Test	7/8/2016	16G0155	42-2-SP6B3	7/6/2016	Soil	X	X	X					X	X	X
Con-Test	7/26/2016	16G1022	42-2-SP-6BS (treated 91 hours)	7/22/2016	Soil	X	X								

Notes:
1. Soil samples only analyzed for lead SW-846 6010C instead of MA16 metals, because Method 3 Risk Characterization determined this metal was the remediation driver at Lot 37 EP1 and Lot 42 EP2B.
2. TCLP lead SW-846 1311 is not a CAM-compliant method. It is intended to evaluate lead leachability consistent with RCRA TCLP requirements.
3. 16G0155: Soils from Lot 42 EP2B impacted with coal tar; disposal criteria testing, then removed from Site.
4. Samples analyzed for RCRA 8 metals not MA16 metals, because Method 3 Risk Characterization determined lead was the remediation driver at Lot 42 EP2B.

Table C-1.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
			ALL OHM FOR ALL SAMPLES MET CAM REPORTING LIMIT
			REQUIREMENTS

Table C-1.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-1-2015 / 37-1-7	15I0178-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 9-8-2015 / All Samples	15I0375-01, -02, -03, -04, and -05	SW-846 6010C	Lead: The reporting limit verification for the AIHA lead program is outside of control limits for this element. Any reported result at or near the detection limit may be bias on the high side.
Soil / 9-11-2015 / 37-1-5SA	15I0630-01	SW-846 6010C	Lead: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 9-15-15 / 42-2-5	15I0888-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 9-21-15 / 42-2-3	15I1047-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 9-28-2015 / 42-2-6 6-15	15I1339-01	SW-846 6010C	Lead: Analyte is found in the associated blank as well as in the sample.
Soil / 9-28-2015 / 42-2-6 6-15	15I1339-01	SW-846 6010C	Lead: Data is not affected by elevated level in blank since sample result is >10x level found in the blank.
Soil / 9-28-2015 / 42-2-6 6-15	15I1339-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 10-1-2015 / 42-2-3 0-6'	15J0069-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 10-6-2015 / All Samples	15J0281-01, -02, -03, and -04	SW-846 6010C	Lead: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 10-9-2015 / 42-2-6B 6-15'	15J0593-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 10-19-2015 / 42-2-6C 6-15', 42-2-4C1 6-15', 42-2-4C2 6-15'	15J0841-01, -02, and -03	SW-846 6010C	Lead: The reporting limit verification for the AIHA lead program is outside of control limits for this element. Any reported result at or near the detection limit may be bias on the high side.
Soil / 10-19-2015 / 42-2-6C 6-15'	15J0841-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 11-10-2015 / 42-2-51	15K0473-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 4-8-2016 / 42-4-6S	16D0351-01	SW-846 8270D	2,4-Dinitrophenol: Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.
Soil / 4-13-2016 / 42-2-WP-SW1	16D0579-01	SW-846 6010C-D	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 4-13-2016 / 42-2-WP-SW1	16D0579-01	SW-846 6010C-D	Lead: Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.
Soil / 6-15-2016 / 42-2-SP257	16F0799-01	SW-846 6010C-D	Lead: The reporting limit verification for the AIHA lead program is outside of control limits for this element. Any reported result at or near the detection limit may be bias on the high side.

Table C-1.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 6-20-2016/ RGP-345-W4	16F1022-01	SW-846 8081B	4,4'-DDE and 4,4'-DDE[2C]: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 6-20-2016/ RGP-345-W4	16F1022-01	SW-846 8081B	Methoxychlor [2C]: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-2.1
Summary of Laboratory Reports for RGP Remediation / Study

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date(s)	Environmental Media	Chain of Custody?	Field Notes Available	GEC File Number
Con-Test	11/9/2015	15K0204	Yes	Yes	11/4/2015	Soil	Yes	Yes	RGP-1.1
Con-Test	11/13/2015	15K0444	Yes	Yes	11/9/2015	Soil	Yes	Yes	RGP-1.2 / RGP-2.2
Con-Test	11/24/2015	15K1064	Yes	Yes	11/19/2015	Soil	Yes	Yes	RGP-1.3
Con-Test	12/15/2015	15L0328	Yes	Yes	12/7/2015	Soil	Yes	Yes	RGP-1.4
Con-Test	1/11/2016	16A0177	Yes	Yes	1/7/2016	Soil	Yes	Yes	RGP-1.5
Con-Test	1/11/2016	16A0179	Yes	Yes	1/7/2016	Soil	Yes	Yes	RGP-1.6
Con-Test	11/11/2015	15K0351	Yes	Yes	11/6/2015	Soil	Yes	Yes	RGP-2.1
Con-Test	12/9/2015	15L0104	Yes	Yes	12/1/2015	Soil	Yes	Yes	RGP-2.3
Con-Test	12/21/2015	15L1002	Yes	Yes	12/18/2015	Soil	Yes	Yes	RGP-2.4
Con-Test	11/17/2015	15K0572	Yes	Yes	11/12/2015	Soil	Yes	Yes	RGP-3.1
Con-Test	11/25/2015	15K1066	Yes	Yes	11/20/2015	Soil	Yes	Yes	RGP-3.2
Con-Test	12/8/2015	15L0255	Yes	Yes	12/3/2015	Soil	Yes	Yes	RGP-3.3
Con-Test	12/7/2015	15K1310	Yes	Yes	11/30/2015	Soil	Yes	Yes	RGP-6.1
Con-Test	12/10/2015	15L0514	No - TCLP Pb	Not applicable	11/30/2015	Soil	Yes	Yes	RGP-6.2
Con-Test	1/26/2016	16A0864	Yes	Yes	1/22/2016	Soil	Yes	Yes	RGP-6.3 / RGP-7.2
Con-Test	1/28/2016	16A1003	Yes	Yes	1/22/2016	Soil	Yes	Yes	RGP-6.4
Con-Test	3/4/2016	16C0101	Yes	Yes	3/1/2016	Soil	Yes	Yes	RGP-6.5
Con-Test	3/7/2016	16C0195	Yes	Yes	3/1/2016	Soil	Yes	Yes	RGP-6.6
Con-Test	3/11/2016	16C0399	Yes	Yes	3/9/2016	Soil	Yes	Yes	RGP-6.7
Con-Test	1/19/2016	16A0548	Yes	Yes	1/15/2016	Soil	Yes	Yes	RGP-7.1
Con-Test	2/23/2016	16B0876	Yes	Yes	2/22/2016	Soil	Yes	Yes	RGP-7.3
Con-Test	6/27/2016	16F1225	No - Disp. Crit.	Not applicable	6/23/2016	Soil	Yes	Yes	RGP-7.4
Con-Test	12/14/2015	15L0377	Yes	Yes	12/8/2015	Soil	Yes	Yes	RGP-8.1
Con-Test	12/16/2015	15L0588	Yes	Yes	12/11/2015	Soil	Yes	Yes	RGP-8.2
Con-Test	12/16/2015	15L0713	Yes	Yes	12/14/2015	Soil	Yes	Yes	RGP-8.3
Con-Test	12/16/2015	15L0716	Yes	Yes	12/12/2015	Soil	Yes	Yes	RGP-8.4
Con-Test	1/6/2016	15L1307	Yes	Yes	12/23/15, 12/24/15	Soil, Water	Yes	Yes	RGP-8.5
Con-Test	12/29/2015	15L1340	Yes	Yes	12/28/2015	Soil	Yes	Yes	RGP-8.6
Con-Test	3/29/2016	16C1020	Yes	No - Note 1	3/22/2016	Water	Yes	Yes	RGP-8.7
Con-Test	1/15/2016	16A0420	Yes	Yes	1/12/2016	Soil	Yes	Yes	RGP-9.1 / RGP-3456.1
Con-Test	1/18/2016	16A0479	Yes	Yes	1/12/2016	Soil	Yes	Yes	RGP-9.2 / RGP-3456.2
Con-Test	1/21/2016	16A0734	Yes	Yes	1/20/2016	Soil	Yes	Yes	RGP-9.3
Con-Test	4/26/2016	16D0917	Yes	Yes	4/19/2016	Soil	Yes	Yes	RGP-11.1
Con-Test	5/23/2016	16E0805	Yes	Yes	5/18/2016	Soil	Yes	Yes	RGP-11.2
Con-Test	7/12/2016	16G0281	Yes	Yes	7/8/2016	Soil	Yes	Yes	RGP-12.1
Con-Test	7/18/2016	16G0536	Yes	Yes	7/13/2016	Soil	Yes	Yes	RGP-12.2
Con-Test	7/25/2016	16G1023	Yes	Yes	7/22/2016	Soil	Yes	No	RGP-12.3
Con-Test	7/22/2016	16G0868	Yes	Yes	7/20/2016	Soil	Yes	Yes	RGP-13.1

Note: 1. MADEP MCP Analytical Certification Form box Ea is checked "No"; however, narrative says no significant modifications were made to the VPH or EPH methods. Only issue was reporting limit for VPH analysis not being met due to foaming characteristics.

Table C-2.2
Completion of Sampling Plan(s), Consistency with Sampling Plan(s) and Consistency with Standard Operating Procedures

Actual or Proposed Sample	Issue 1: Work not Completed as Planned	Issue 2: Deviations from Sampling Plan or SOP
	None identified	None identified

Table C-2.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	Flash Point SW-846 1010A	SW-846 1311 / 6010C TCLP lead	Ignitab. SW-846 1030	Spec. Cond. SM21-22 2510B	13 MA Metals SW-846 6010C	Mercury SW-846 7471B	Organ. Pest. SW-846 8081B	PCBs SW-846 8082A	TPH SW-846 8100 Modified	Herbic. SW-846 8151A	VOCs SW-846 8260C	SVOCs SW-846 8270D	Cyanide SW-846 9014	Sulfides SW-846 9030A	pH SW-846 9045C	Sp. Cond. SM21-22 2510B Mod.
Con-Test	11/9/2015	15K0204	SB-1	11/4/2015	Soil	X																	
Con-Test	11/13/2015	15K0444	PL-1	11/9/2015	Soil													X					
			SB-1									X	X		X *			X	X				
Con-Test	11/24/2015	15K1064	SB-1-N	11/19/2015	Soil	X																	
			SB-1-E			X																	
			SB-1-S			X																	
			SB-1-W			X																	
			SB-1-B			X																	
			SB-1-SP			X																	
Con-Test	12/15/2015	15L0328	SB-1-2N	12/7/2015	Soil														X - PAH				
			SB-1-2E																X - PAH				
			SB-1-2S																X - PAH				
			SB-1-2W																X - PAH				
			SB-1-2B																X - PAH				
			SB-1-2						X		X	X	X	X	X *	X	X	X	X	X	X	X	
Con-Test	1/11/2016	16A0177	RGP-1B-SP	1/7/2016	Soil			X	X	X		X	X		X *	X			X	X		X	X
			RGP-1B-SP															X					
Con-Test	1/11/2016	16A0179	RGP-1B	1/7/2016	Soil	X													X				
Con-Test	11/11/2015	15K0351	PL-1		Soil	X						X	X		X *				X				
Con-Test	12/9/2015	15L0104	PL-1		Soil				X	X		X		X		X	X			X	X	X	X
Con-Test	12/21/2015	15L1002	RGP-2-1E	12/18/2015	Soil	X													X				
			RGP-2-1S			X													X				
			RGP-2-1W			X													X				
			RGP-2-1B			X													X				
Con-Test	11/17/2015	15K0572	SB-2	11/12/2015	Soil	X						X	X		X *			X	X				
Con-Test	11/25/2015	15K1066	SB-2-N	11/20/2015	Soil	X									X								
			SB-2-EB			X									X								
			SB-2-S			X									X								
			SB-2-W			X									X								
			SB-2-B			X									X								
			SB-2-SP			X									X								
Con-Test	12/8/2015	15L0255	SB-2-SP-2	12/3/2015	Soil										X								
Con-Test	12/7/2015	15K1310	RGP-6	11/30/2015	Soil	X						X	X		X			X	X				
Con-Test	12/10/2015	15L0514	RGP-6	11/30/2015	Soil				X														
Con-Test	1/26/2016	16A0864	RGP-6-N-A	1/22/2016	Soil							X - Pb							X				
			RGP-6-W-A									X - Pb							X				
			RGP-7				X																
Con-Test	1/28/2016	16A1003	RGP-6-N-A	1/22/2016	Soil				X														
Con-Test	3/4/2016	16C0101	RGP-6-S2	3/1/62016	Soil							X - Pb						X					
			RGP-6-B2									X - Pb						X					
			RGP-6-W2									X - Pb						X					
			RGP-6-S2				X																
			RGP-6-B2				X																
			RGP-6-W2				X																
Con-Test	3/7/2016	16C0195	RGP-6-S2	3/1/2016	Soil	X																	
			RGP-6-B2			X																	
			RGP-6-W2			X																	
Con-Test	3/11/2016	16C0399	RGP-345-B1	3/9/2016	Soil	X								X									
			RGP-6-N2			X						X - Pb											
Con-Test	1/19/2016	16A0548	RGP-7	1/15/2016	Soil	X						X	X		X *			X	X				
Con-Test	2/23/2016	16B0876	RGP-7-S	2/22/2016	Soil	X																	
			RGP-7-W			X																	
			RGP-7-BE			X																	
			RGP-7-SP			X																	
			RGP-7-BW			X																	
			RGP-7-N			X																	

Table C-2.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	Flash Point SW-846 1010A	SW-846 1311 / 6010C TCLP lead	Ignitab. SW-846 1030	Spec. Cond. SM21-22 2510B	13 MA Metals SW-846 6010C	Mercury SW-846 7471B	Organ. Pest. SW-846 8081B	PCBs SW-846 8082A	TPH SW-846 8100 Modified	Herbic. SW-846 8151A	VOCs SW-846 8260C	SVOCs SW-846 8270D	Cyanide SW-846 9014	Sulfides SW-846 9030A	pH SW-846 9045C	Sp. Cond. SM21-22 2510B Mod.
Con-Test	6/27/2016	16F1225	42-4-1-5-SP	6/23/2016	Soil				X	X		X	X	X	X *	X	X		X	X	X	X	X
			42-4-1-5-SP															X					
			RGP-7-SP						X	X		X	X	X	X *	X	X		X	X	X	X	X
			RGP-7-SP															X					
			RGP-10-SP3						X	X		X	X	X	X *	X	X		X	X	X	X	X
			RGP-10-SP3															X					
Con-Test	12/14/2015	15L0377	RGP-8	12/8/2015	Soil	X	X					X	X		X *			X	X				
Con-Test	12/16/2015	15L0588	RGP-8-SP1	12/11/2015	Soil		X			X		X	X		X	X		X	X	X	X	X	
Con-Test	12/16/2015	15L0713	RGP-8-SP2	12/14/2015	Soil		X			X		X	X		X	X		X	X	X	X	X	X
Con-Test	12/16/2015	15L0716	RGP8-NSW1	12/12/2015	Soil	X	X												X - PAH				
			RGP8-NSW2			X	X												X - PAH				
			RGP8-NSW3			X	X												X - PAH				
			RGP8-NSW4			X	X												X - PAH				
			RGP8-NSW5			X	X												X - PAH				
Con-Test	1/6/2016	15L1307	UNKMW-100 (Total)	12/23/2015	Water														X				
			UNKMW-100 (Dissolved)																X				
			RGP-8 BN		Soil	X - Subset	X												X - PAH				
			RGP-8 BE			X - Subset	X												X - PAH				
			RGP-8 BS			X - Subset	X												X - PAH				
			RGP-8 BW			X - Subset	X												X - PAH				
			RGP-8 SSW1			X - Subset	X												X - PAH				
			RGP-8 SSW2			X - Subset	X												X - PAH				
			RGP-8 SSW3			X - Subset	X												X - PAH				
			RGP-8 SSW4			X - Subset	X												X - PAH				
			RGP-8 SSW5			X - Subset	X												X - PAH				
Con-Test	12/29/2015	15L1340	RGP-8-W1	12/28/2015	Soil	X													X - PAH				
			RGP-8-S1			X													X - PAH				
			RGP-8-B1			X													X - PAH				
			RGP-8-N1			X													X - PAH				
			RGP-8-W1			X													X - PAH				
			RGP-8-S1			X													X - PAH				
			RGP-8-B1			X													X - PAH				
			RGP-8-N1			X													X - PAH				
Con-Test	3/29/2016	16C1020	MW-RGP8	3/22/2016	Groundwate	X	X												X - PAH				
			MW-RGP8-F			X													X - PAH				
Con-Test	1/15/2016	16A0420	RGP-9	1/12/2016	Soil	X					X		X		X *				X				
			RGP-9															X					
			RGP-3456			X						X	X		X *				X				
			RGP-3456															X					
Con-Test	1/18/2016	16A0479	RGP-9	1/12/2016	Soil				X														
			RGP-3456						X														
Con-Test	1/21/2016	16A0734	RGP-9-B	1/20/2016	Soil							X - Cd							X				
			RGP-9-E									X - Cd							X				
			RGP-9-W									X - Cd							X				
			RGP-9-N									X - Cd							X				
			RGP-9-S									X - Cd							X				
			RGP-9-SP									X - Cd							X				
Con-Test	4/26/2016	16D0917	RGP-11	4/19/2016	Soil	X						X	X		X *				X				
			RGP-11				X											X					
Con-Test	5/23/2016	16E0805	RGP-11-2	5/18/2016	Soil	X	X					X	X		X *			X	X				
Con-Test	7/12/2016	16G0281	RGP-12	7/8/2016	Soil	X	X					X	X		X *			X	X				

Table C-2.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	Flash Point SW-846 1010A	SW-846 1311 / 6010C TCLP lead	Ignitab. SW-846 1030	Spec. Cond. SM21-22 2510B	13 MA Metals SW-846 6010C	Mercury SW-846 7471B	Organ. Pest. SW-846 8081B	PCBs SW-846 8082A	TPH SW-846 8100 Modified	Herbic. SW-846 8151A	VOCs SW-846 8260C	SVOCs SW-846 8270D	Cyanide SW-846 9014	Sulfides SW-846 9030A	pH SW-846 9045C	Sp. Cond. SM21-22 2510B Mod.
Con-Test	7/18/2016	16G0536	RGP-12-1	7/13/2016	Soil				X	X		X	X	X	X		X	X	X	X	X	X	X
Con-Test	7/25/2016	16G1023	RGP-12-NW-SW	7/22/2016	Soil	X																	
			RGP-12-NW-BTM			X																	
			RGP-12-BTM			X																	
			RGP-12-SSW			X																	
			RGP-12-WSW			X																	
			RGP-12-ESW			X																	
Con-Test	7/22/2016	16G0868	RGP-13	7/20/2016	Soil	X						X	X		X *				X				
			RGP-13				X											X					

Notes: * Sample analyzed for PCBs via USEPA Method 8082A without Soxhlet extraction.
X - PAH: Samples were analyzed for polycyclic aromatic hydrocarbons (PAHs) only and not for the full suite of semi-volatile organic compounds.
X - Pb or X - Cd: Samples were analyzed for lead (Pb) or cadmium (Cd) only, and not for the full suite of MA14 metal.s
The following analytical methods are CAM methods: MADEP-EPH-04-1.1, MADEP-VPH-04-1.1, 6010C, 7471B, 8081B, 8082A, 8151A, 8260C and 8270D.

Table C-2.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 11-9-2015 / SB-1	15K0444-02	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 11-9-2015 / SB-1	15K0444-02	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8151A	Elevated reporting limit due to matrix interference.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-1-2015 / PL-1	15L0104-01	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 11-20-2015 / SB-2-S SB-2-W, SB-2-B, SB-2-SP	15K1066-03, -04, -05, and -06	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 12-3-2015 / SB-2-SP-2	15L0255-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 1-22-2016 / RGP-6-N-A, RGP-6-W-A	16A0864-01 and -02	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 3-1-2016 / RGP-6-S2, RGP-6-W2	16C0101-04, -06	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 3-1-2016 / RGP-6-B2	16C0101-05	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Insufficient amount of soil. Data validation is not affected since a sufficient amount of preservative is present. Detection limits may be above useful levels.
Soil / 3-9-2016 / RGP-345-B1	16C0399-01	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,2,3-Trichlorobenzene: Elevated reporting limit based on lowest point in calibration.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBCP): Elevated reporting limit based on lowest point in calibration.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Bromomethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Carbon Disulfide: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Chloromethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Methylene Chloride: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Tetrahydrofuran: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3	16F1225-01, -03, and -05	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 6-23-2016 / RGP-10-SP3	16F1225-05	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 6-23-2016 / RGP-10-SP3	16F1225-06	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.

Table C-2.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-8-2015 / RGP-8	15L0377-01	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Insufficient amount of soil. Data validation is not affected since a sufficient amount of preservative is present. Detection limits may be above useful levels.
Soil / 12-8-2015 / RGP-8	15L0377-01	MADEP-VPH-04-1.1	C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	MADEP-VPH-04-1.1	Naphthalene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	MADEP-VPH-04-1.1	Unadjusted C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8260C	Bromomethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8260C	Carbon Disulfide: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8260C	Chloromethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8260C	Methylene Chloride: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	MADEP-VPH-04-1.	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 12-12-2015 / RGP8-NSW1, RGP8-NSW2, RGP8-NSW3, RGP8-NSW4, RGP8-NSW5	15L0716-01, -02, -03, -04, and -05	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 12-12-2015 / RGP8-NSW1	15L0716-01	MADEP-VPH-04-1.1	C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-12-2015 / RGP8-NSW1	15L0716-01	MADEP-VPH-04-1.1	Naphthalene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-12-2015 / RGP8-NSW1	15L0716-01	MADEP-VPH-04-1.1	Unadjusted C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 12-23-2015 / RGP-8 BN, RGP-8 SSW1, RGP-8 SSW2, RGP-8 SSW3, RGP-8 SSW4, RGP-8 SSW5	15L1307-03, -07, -08, -09, -10, -11	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 12-23-2015 / RGP-8 BE	15L1307-04	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Insufficient amount of soil. Data validation is not affected since a sufficient amount of preservative is present. Detection limits may be above useful levels.
Soil / 12-23-2015 / RGP-8 BN	15L1307-03	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds.
Soil / 12-2-2015 / RGP-8-S1, RGP-8-B1, RGP-8-N1	15L1340-06, -07, and -08	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.

Table C-2.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Groundwater / 3-22-2016 / MW-RGP8	16C1020-01	MADEP-VPH-04-1.1	Elevated reporting limit due to foaming sample matrix. MA CAM reporting limit not met.
Soil / 4-19-2015 / RGP-11	16D0917-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	MADEP-VPH-04-1.	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Excess amount of soil. Sample was completely covered with methanol, but with less than the method-specified amount.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Benzene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	C9-C10 Aromatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	C9-C12 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	m+p Xylene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Methyl tert-Butyl Ether (MTBE): Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	o-Xylene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Toluene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Unadjusted C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	MADEP-VPH-04-1.1	Unadjusted C9-C12 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 6010C-D	Antimony: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 6010C-D	Zinc: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 6010C-D	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 7-20-2016 / RGP-13	16G0868-01	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 11-4-2015 / SB-1	15K0204-01	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 11-4-2015 / SB-1	15K0204-01	MADEP-EPH-04-1.1	n-Nonane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 11-9-2015 / PL-1	15K0444-01	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 11-9-2015 / PL-1, SB-1	15K0444-01, and -02	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBC): Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 11-9-2015 / PL-1, SB-1	15K0444-01, and -02	SW-846 8260C	Bromoform: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 11-9-2015 / PL-1, SB-1	15K0444-01, and -02	SW-846 8260C	Trichlorofluoromethane (Freon 11): Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 11-9-2015 / SB-1	15K0444-02	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-9-2015 / PL-1	15K0444-01	SW-846 8260C	Trichlorofluoromethane (Freon 11): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-9-2015 / PL-1, SB-1	15K0444-01 and -02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 11-9-2015 / All Samples	15K0444-01 and -02	SW-846 8260C	2,2-Dichloropropane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-9-2015 / All Samples	15K0444-01 and -02	SW-846 8260C	Bromoform: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8151A	Dinoseb: Initial continuing calibration standard was within method criteria. Closing continuing calibration standard was outside of method criteria, biased on the low side. Reanalysis yielded similar non-conformance, matrix interference was confirmed.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8151A	Dinoseb [2C]: Initial continuing calibration standard was within method criteria. Closing continuing calibration standard was outside of method criteria, biased on the low side. Reanalysis yielded similar non-conformance, matrix interference was confirmed.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8151A	2,4-Dichlorophenylacetic acid: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8151A	2,4-Dichlorophenylacetic acid [2C]: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	2-Butanone (MEK): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	Bromochloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	Carbon Disulfide: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	Chloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8260C	Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8270D	Aniline: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8270D	2,4-Dinitrophenol: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8270D	Pentachlorophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8270D	Aniline: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-7-2015 / All Samples	15L0328-01 to -06	SW-846 8270D	Bis(2-chloroethyl)ether: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-7-2015 / SB-1-2N, SB-1-2E, SB-1-2S, SB-1-2W	15L0328-01RE1, -02RE1, -03RE1, -04RE1	SW-846 8270D	Pyrene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-7-2015 / SB-1-2	15L0328-06	SW-846 8270D	Bis(2-chloroethyl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / All Samples	16A0177-01 and -02	SW-846 7471B	Mercury: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 7471B	Mercury: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8082A	Aroclor-1254: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8082A	Aroclor-1254 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-02	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 1-7-2016 / All Samples	16A0177-01 and -02	SW-846 8260C	Vinyl Chloride: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-02	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 1-7-2016 / RGP-1B-SP	16A0177-02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 1-7-2016 / All Samples	16A0177-01 and -02	SW-846 8270D	3,3-Dichlorobenzidine: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / All Samples	16A0177-01 and -02	SW-846 8270D	Aniline: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8270D	Acetophenone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / RGP-1B-SP	16A0177-01	SW-846 8270D	Hexachloroethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / RGP-1B	16A0179-01	SW-846 8270D	3,3-Dichlorobenzidine: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / RGP-1B	16A0179-01	SW-846 8270D	Aniline: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-7-2016 / RGP-1B	16A0179-01RE1	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / RGP-1B	16A0179-01RE1	SW-846 8270D	Acetophenone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-7-2016 / RGP-1B	16A0179-01RE1	SW-846 8270D	Hexachloroethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8082A	Aroclor-1254: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8082A	Aroclor-1254 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8270D	2,4-Dinitrophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8270D	2-Methylphenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8270D	Aniline: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-6-2015 / PL-1	15K0351-01	SW-846 8270D	Bis(2-chloroisopropyl)ether: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-1-2015 / PL-1	15L0104-01	SW-846 9045C	pH: Sample received after recommended holding time was exceeded.
Soil / 12-18-2015 / RGP-2-1E, RGP-2-1S, RGP-2-1W, RGP-2-1B	15L1002-01, -02, -03, and -04	SW-846 8270D	1,3-Dichlorobenzene: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 12-18-2015 / RGP-2-1E, RGP-2-1S, RGP-2-1W, RGP-2-1B	15L1002-01, -02, -03, and -04	SW-846 8270D	Aniline: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 12-18-2015 / RGP-2-1E, RGP-2-1S, RGP-2-1W, RGP-2-1B	15L1002-01, -02, -03, and -04	SW-846 8270D	Bis(2-chloroisopropyl)ether: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-18-2015 / All Samples	15L1002-01 to -04	SW-846 8270D	1,4-Dichlorobenzene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-18-2015 / All Samples	15L1002-01 to -04	SW-846 8270D	3,3-Dichlorobenzidine: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-18-2015 / All Samples	15L1002-01 to -04	SW-846 8270D	Hexachloroethane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-18-2015 / RGP-2-1E, RGP-2-1S, RGP-2-1W, RGP-2-1B	15L1002-01, -02, -03, and -04	SW-846 8270D	2,4,6-Tribromophenol: One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
Soil / 11-12-2015 / SB-2	15K0572-01	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 11-12-2015 / SB-2	15K0572-01	MADEP-EPH-04-1.1	n-Nonane: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 7471B	Mercury: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8082A	Aroclor-1242: Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8082A	Aroclor-1242 [2C]: Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Hexachlorobutadiene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	1,1,1-Trichloroethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	2,2-Dichloropropane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Carbon Disulfide: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	Isopropylbenzene (Cumene): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	n-Propylbenzene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8260C	tert-Butylbenzene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-12-2015 / SB-2	15K0572-01	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 11-30-2015 / RGP-6	15K1310-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-30-2015 / RGP-6	15K1310-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	2-Butanone (MEK): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	2-Hexanone (MBK): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	4-Methyl-2-pentanone (MIBK): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	Carbon Disulfide: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8260C	Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 11-30-2015 / RGP-6	15K1310-01	SW-846 8270D	Aniline: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 11-30-2015 / All Samples	15K1310-01	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 11-30-2015 / RGP-6	15K1310-01	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-22-2016 / RGP-6-N-A, RGP-6-W-A	16A0864-01 and -02	SW-846 8270D	2,4,6-Tribromophenol: One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
Soil / 1-22-2016 / RGP-6-N-A, RGP-6-W-A	16A0864-01 and -02	SW-846 8270D	Nitrobenzene-d5: One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
Soil / 1-22-2016 / RGP-6-N-A, RGP-6-W-A	16A0864-01 and -02	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 3-1-2016 / All Samples	16C0101-01, to -06	SW-846 8260C	Naphthalene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 3-1-2016 / All Samples	16C0101-01, to -06	SW-846 8260C	Vinyl Chloride: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 3-1-2016 / RGP-6-S2, RGP-6-B2, RGP-6-W2	16C0101-01, -02, and -03	SW-846 8260C	Sample preserved in the laboratory, not in the field as required by the method.
Soil / 3-1-2016 / RGP-6-S2, RGP-6-B2, RGP-6-W2	16C0101-01, -02, and -03	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 3-1-2016 / RGP-6-S2, RGP-6-B2, RGP-6-W2	16C0101-01, -02, and -03	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 3-1-2016 / RGP-6-S2, RGP-6-B2, RGP-6-W2	16C0101-01, -02, and -03	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 3-9-2016 / All Samples	16C0399-01 and -02	SW-846 6010C/D	Lead: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 6010C	Lead: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 7471B	Mercury: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 7471B	Mercury: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 8260C	Bromochloromethane: Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBCP): Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,4-Dioxane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound. Analyte & Samples(s) Qualified:
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBCP): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Bromoform: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	Hexachlorobutadiene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 8260C	Bromochloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-15-2016 / All Samples	16A0548-01	SW-846 8260C	Chloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-15-2016 / RGP-7	16A0548-01	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / RGP-7-SP	16F1225-03	SW-846 8081B	4,4'-DDT: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3	16F1225-01, -03, and -05	SW-846 8151A	Dalapon: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3	16F1225-01, -03, and -05	SW-846 8151A	Dalapon [2C]: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3	16F1225-01, -03, and -05	SW-846 8151A	Dinoseb: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3	16F1225-01, -03, and -05	SW-846 8151A	Dinoseb [2C]: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8151A	Dalapon [2C]: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04, B152228-BLK1, -BS1,-BSD1	SW-846 8260C	Naphthalene: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	1,2,3-Trichlorobenzene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	1,2,4-Trichlorobenzene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Chloroethane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Isopropylbenzene (Cumene): Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Methylene Chloride: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Vinyl Chloride: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, and -04	SW-846 8260C	Tetrahydrofuran: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-23-2016 / RGP-10-SP3	16F1225-06	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	Bromomethane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP	16F1225-02, -04,	SW-846 8260C	Vinyl Chloride: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 6-23-2016 / 42-4-1-5-SP, RGP-7-SP, RGP-10-SP3,	16F1225-02, -04, -06	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Bromochloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Diisopropyl Ether (DIPE): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 6-23-2016 / All Samples	16F1225-01 to -06	SW-846 8260C	Methylene Chloride: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-8-2015 / All Samples	B137173-01	SW-846 6010C	Antimony: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 6010C	Antimony: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 6010C	Lead: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 6010C	Zinc: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8260C	Vinyl Chloride: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-8-2015 / RGP-8	15L0377-01,	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8260C	Bromochloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8260C	Bromomethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-8-2015 / RGP-8	15L0377-01,	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 12-8-2015 / RGP-8	15L0377-01,	SW-846 8270D	2,4-Dinitrophenol: Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
Soil / 12-8-2015 / RGP-8	15L0377-01,	SW-846 8270D	Aniline: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8270D	Hexachlorobutadiene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-8-2015 / All Samples	15L0377-01	SW-846 8270D	Nitrobenzene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8270D	Hexachlorobutadiene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-8-2015 / RGP-8	15L0377-01	SW-846 8270D	Nitrobenzene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-11-2015 / All Samples	15L0588-01	SW-846 8260C	1,2,3-Trichlorobenzene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-11-2015 / All Samples	15L0588-01	SW-846 8260C	1,2,4-Trichlorobenzene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-11-2015 / All Samples	15L0588-01	SW-846 8260C	Naphthalene: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01,	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result
Soil / 12-11-2015 / All Samples	15L0588-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-11-2015 / All Samples	15L0588-01	SW-846 8260C	Carbon Disulfide: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8270D	2,4-Dinitrophenol: Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-11-2015 / RGP-8-SP1	15L0588-01	SW-846 8270D	Dibenz(a,h)anthracene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	Bromochloromethane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	4-Methyl-2-pentanone (MIBK): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	Bromochloromethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	Carbon Disulfide: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / All Samples	15L0713-01	SW-846 8260C	Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8270D	Acetophenone: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8270D	Bis(2-chloroisopropyl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8270D	Bis(2-Ethylhexyl)phthalate: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8270D	Phenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-14-2015 / RGP-8-SP2	15L0713-01	SW-846 8270D	Hexachloroethane: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-12-2015 / RGP8-NSW1, RGP8-NSW2	15L0716-01, 02	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-23-2015 / RGP-8 BE, RGP-8 BS, RGP-8 BW, RGP-8 SSW3	15L1307-04RE1, -05RE1, -06RE1, -09RE1	MADEP-EPH-04-1.1	Chlorooctadecane (COD): Surrogate recovery is outside of control limits due to suspected matrix interference. Samples of a clay-like matrix historically have exhibited low surrogate recovery.
Soil / 12-23-2015 / RGP-8 BE, RGP-8 BS, RGP-8 BW, RGP-8 SSW3	15L1307-04RE1, -05RE1, -06RE1, -09RE1	MADEP-EPH-04-1.1	o-Terphenyl (OTP): Surrogate recovery is outside of control limits due to suspected matrix interference. Samples of a clay-like matrix historically have exhibited low surrogate recovery.
Groundwater / 12-23-2015 / UNKMW-100 (Total), UNKMW-100 (Dissolved)	15L1307-01, -02	SW-846 8270D	2,4,6-Tribromophenol: One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
Groundwater / 12-23-2015 / UNKMW-100 (Total), UNKMW-100 (Dissolved)	15L1307-01, -02	SW-846 8270D	2,4-Dinitrophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-23-2015 / RGP-8 BN	15L1307-03	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-23-2015 / All Samples	15L1307-01 to -03	SW-846 8270D	Dibenz(a,h)anthracene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 12-23-2015 / All Samples	15L1307-01 to -03	SW-846 8270D	Indeno(1,2,3-cd)pyrene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Groundwater / 12-23-2015 / UNKMW-100 (Total), UNKMW-100 (Dissolved)	15L1307-01, -02	SW-846 8270D	Pentachlorophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Groundwater / 12-23-2015 / UNKMW-100 (Total), UNKMW-100 (Dissolved)	15L1307-01 and -02	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-23-2015 / RGP-8 SSW5	15L1307-11	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-23-2015 / RGP-8 SSW5	15L1307-11	SW-846 8270D	Dibenz(a,h)anthracene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-23-2015 / RGP-8 SSW5	15L1307-11	SW-846 8270D	Indeno(1,2,3-cd)pyrene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 12-2-2015 / All Samples	B138617-01 to -08	SW-846 8270D	2-Methylnaphthalene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 12-2-2015 / RGP-8-W1, RGP-8-S1, RGP-8-B1	15L1340-01, -02, and -03,	SW-846 8270D	2-Methylnaphthalene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-12-2016 / RGP-9, RGP-3456	16A0420-02, -04,	SW-846 8260C	2,2-Dichloropropane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 1-12-2016 / RGP-9, RGP-3456	16A0420-02, -04,	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 1-12-2016 / RGP-9, RGP-3456	16A0420-02, -04	SW-846 8270D	3,3-Dichlorobenzidine: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-12-2016 / RGP-9, RGP-3456	16A0420-02, -04	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 1-20-2015 / All Samples	16A0734-01 to -06	SW-846 8270D	3,3-Dichlorobenzidine: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 1-20-2015 / RGP-9-E, RGP-9-W	16A0734-02, -03	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-20-2015 / RGP-9-E, RGP-9-W	16A0734-02, -03	SW-846 8270D	Indeno(1,2,3-cd)pyrene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 4-19-2015 / RGP-11	16D0917-02	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Insufficient amount of soil. Data validation is not affected since a sufficient amount of preservative is present. Detection limits may be above useful levels.
Soil / 4-19-2015 / All Samples	16D0917-01, -02	SW-846 8260C	Tetrahydrofuran: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 4-19-2015 / RGP-11	16D0917-02	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 4-19-2015 / RGP-11	16D0917-02	SW-846 8260C	Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 4-19-2015 / RGP-11	16D0917-02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 4-19-2015 / RGP-11	16D0917-02	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 4-19-2015 / RGP-11	16D0917-02	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 4-19-2015 / RGP-11	16D0917-02,	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 4-19-2015 / RGP-11	16D0917-02,	SW-846 8270D	Dibenz(a,h)anthracene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8082A	Aroclor-1016: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8082A	Aroclor-1016 [2C]: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	Tetrahydrofuran: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 5-18-2016 / All Samples	16E0805-01	SW-846 8260C	Chloromethane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBCP): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result
Soil / 5-18-2016 / RGP-11-2	16E0805-01	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result
Soil / 5-18-2016 / All Samples	16E0805-01	SW-846 8260C	Trichlorofluoromethane (Freon 11): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 5-18-2016 / RGP-11-2	16E0805-01,	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-18-2016 / RGP-11-2	16E0805-01,	SW-846 8270D	4-Chloroaniline: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-18-2016 / RGP-11-2	16E0805-01,	SW-846 8270D	Aniline: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8260C	Tetrahydrofuran: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-8-2016 / RGP-12	16G0281-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	2,4,5-Trichlorophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	4-Chloroanilinel: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	4-Nitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	2,4-Dinitrophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	Di-n-octylphthalate: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-8-2016 / RGP-12	16G0281-01RE1	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 7-8-2016 / All Samples	16G0281-01	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 7-13-2016 / All Samples	16G0536-01, -02	SW-846 8081B	alpha-BHC [2C]: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 7-13-2016 / All Samples	16G0536-01, -02	SW-846 8081B	gamma-BHC (Lindane) [2C]: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 8151A	Dinoseb: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-13-2016 / RGP-12-1	16G0536-01	SW-846 8151A	Dinoseb [2C]: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-13-2016 / All Samples	16G0536-01, -02	SW-846 8260C	Isopropylbenzene (Cumene): Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
Soil / 7-13-2016 / RGP-12-1	16G0536-02	SW-846 8260C	2,2-Dichloropropane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-13-2016 / RGP-12-1	16G0536-02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 7-13-2016 / RGP-12-1	16G0536-02	SW-846 8270D	Di-n-octylphthalate: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-22-2016 / RGP-12-NW-SW, RGP-12-NW-BTM, RGP-12-BTM, RGP-12-SSW, RGP-12-WSW, RGP-12-ESW	16G1023-01, -02, -03, -04, -05, and -06	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 7-22-2016 /All Samples	16G1023-01 to -06	MADEP-EPH-04-1.1	n-Nonane: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 7-22-2016 /All Samples	16G1023-01 to -06	MADEP-EPH-04-1.1	n-Decane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 7-20-2016 / RGP-13	16G0868-01	MADEP-EPH-04-1.1	Chlorooctadecane (COD): Surrogate recovery is outside of control limits due to suspected matrix interference. Samples of a clay-like matrix historically have exhibited low surrogate recovery.
Soil / 7-20-2016 / RGP-13	16G0868-01	MADEP-EPH-04-1.1	o-Terphenyl (OTP): Surrogate recovery is outside of control limits due to suspected matrix interference. Samples of a clay-like matrix historically have exhibited low surrogate recovery.
Soil / 7-20-2016 / RGP-13	16G0868-02	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 7-20-2016 / All Samples	16G0868-01	SW-846 8260C	2,2-Dichloropropane: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 7-20-2016 / All Samples	16G0868-01	SW-846 8260C	Tetrahydrofuran: Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
Soil / 7-20-2016 / RGP-13	16G0868-02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 7-20-2016 / All Samples	16G0868-01	SW-846 8260C	Dichlorodifluoromethane (Freon 12): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 7-20-2016 / RGP-13	16G0868-01RE1	SW-846 8270D	Pentachlorophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-2.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 7-20-2016 / RGP-13	16G0868-01RE1	SW-846 8270D	Bis(2-chloroisopropyl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 7-20-2016 / RGP-13	16G0868-01RE1	SW-846 8270D	Di-n-octylphthalate: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-3.1
Summary of Laboratory Reports for PCB Remediation

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date	Environmental Media	Chain of Custody?	Field Notes Available	GEC File Number	Description
Contest	12/2/2016	16K1456	Yes	Yes	11/29/2016	Soil	Yes	Yes	PCB01	Lot 42 EP1
Contest	12/2/2016	16K1511	Yes	Yes	11/30/2016	Soil	Yes	Yes	PCB02	Lot 42 EP1
Contest	12/5/2016	16L0091	Yes	Yes	12/1/2016	Soil	Yes	Yes	PCB03	Lot 42 EP1
Contest	12/6/2016	16L0153	Yes	Yes	12/2/2016	Soil	Yes	Yes	PCB04	Lot 42 EP1
Spectrum	12/8/2016	SC29196	Yes	Yes	12/6/2016	Soil	Yes	Yes	PCB05	Lot 42 EP1
Spectrum	12/9/2016	SC29258	Yes	Yes	12/7/2016	Soil	Yes	Yes	PCB06	Lot 42 EP1
Spectrum	12/13/2016	SC29397	Yes	Yes	12/9/2016	Soil	Yes	Yes	PCB07	Lot 42 EP1
Spectrum	12/15/2016	SC29498	Yes	Yes	12/13/2016	Soil	Yes	Yes	PCB08	Lot 42 EP1
Spectrum	1/6/2017	SC30218	Yes	Yes	1/4/2017	Soil	Yes	Yes	PCB09	Lot 42 EP1
Spectrum	1/9/2017	SC30273	Yes	Yes	1/5/2017	Soil	Yes	Yes	PCB10	Lot 42 EP1
Spectrum	1/13/2017	SC30393	Yes	Yes	1/11/2017	Soil	Yes	Yes	PCB11	Lot 42 EP1
Spectrum	1/16/2017	SC30464	Yes	Yes	1/12/2017	Soil	Yes	Yes	PCB12	Lot 42 EP1
Spectrum	1/17/2017	SC30526	Yes	Yes	1/13/2017	Soil	Yes	Yes	PCB13	Lot 42 EP1
Spectrum	1/19/2017	SC30641	Yes	Yes	1/17/2017	Soil	Yes	Yes	PCB14	Lot 42 EP1
Spectrum	1/20/2017	SC30699	Yes	Yes	1/18/2017	Soil	Yes	Yes	PCB15	Lot 42 EP1
Spectrum	1/23/2017	SC30762	Yes	Yes	1/19/2017	Soil	Yes	Yes	PCB16	Lot 42 EP1
Spectrum	1/24/2017	SC30817	Yes	Yes	1/20/2017	Soil	Yes	Yes	PCB17	Lot 42 EP1
Spectrum	1/30/2017	SC31022	Yes	Yes	1/26/2017	Soil	Yes	Yes	PCB18	Lot 42 EP1
Spectrum	1/31/2017	SC31072	Yes	Yes	1/27/2017	Soil	Yes	Yes	PCB19	Lot 42 EP1
Spectrum	2/1/2017	SC31130	Yes	Yes	1/30/2017	Soil	Yes	Yes	PCB20	Lot 42 EP1
Spectrum	2/7/2017	SC31310	Yes	Yes	2/3/2017	Soil	Yes	Yes	PCB21	Lot 42 EP1
Spectrum	2/8/2017	SC31345	Yes	Yes	2/6/2017	Soil	Yes	Yes	PCB22	Lot 42 EP1
Spectrum	2/9/2017	SC31382	Yes	Yes	2/7/2017	Soil	Yes	Yes	PCB23	Lot 42 EP1
Spectrum	2/10/2017	SC31428	Yes	Yes	2/8/2017	Soil	Yes	Yes	PCB24	Lot 42 EP1
Spectrum	2/17/2017	SC31593	Yes	Yes	2/15/2017	Soil	Yes	Yes	PCB25	Lot 42 EP1
Spectrum	2/23/2017	SC31771	Yes	Yes	2/21/2017	Soil	Yes	Yes	PCB26	Lot 42 EP1

Table C-3.2
Completion of Sampling Plan(s), Consistency with Sampling Plan(s) and Consistency with Standard Operation Procedures

Actual or Proposed Sample	Issue 1: Work not Completed as Planned	Issue 2: Deviations from Sampling Plan or SOP
	None identified	None identified

Table C-3.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-5/2004R	PCBs SW-846 8082A
Contest	12/2/2016	16K1456	42-1-3A to 42-1-3F, 42-1-NW Wall, SW Wall	11/29/2016	Soil		x
Contest	12/2/2016	16K1511	42-1-3G to 42-1-3O	11/30/2016	Soil		x
Contest	12/5/2016	16L0091	42-1-3P to 42-1-3W, 42-1-3S1	12/1/2016	Soil		x
Contest	12/6/2016	16L0153	42-1-3X to 42-1-3Z, 42-1-1A to 42-1-1D	12/2/2016	Soil		x
Spectrum	12/8/2016	SC29196	42-1-1E to 42-1-1J	12/6/2016	Soil		x
Spectrum	12/9/2016	SC29258	42-1-3AA to 42-3FF	12/7/2016	Soil		x
Spectrum	12/13/2016	SC29397	42-1-3B North Wall, 42-1-3GG to 42-1-3KK, 42-1-3 North Wall 2	12/9/2016	Soil	x	x
Spectrum	12/15/2016	SC29498	42-1-3LL to 42-1-3RR	12/13/2016	Soil		x
Spectrum	1/6/2017	SC30218	42-1-2A to 42-1-2G	1/4/2017	Soil		x
Spectrum	1/9/2017	SC30273	42-1-3SS to 42-1-3XX, 42-1-2H to 42-1-2J	1/5/2017	Soil		x
Spectrum	1/13/2017	SC30393	42-1-2K to 42-1-2R, 42-1-2N Bottom, East Sidewall, South Sidewall, 42-1-3OP Sidewall, 42-1-3N Bottom	1/11/2017	Soil		x
Spectrum	1/16/2017	SC30464	42-1-1AA to 42-1-1NN, 42-1-1AA Bottom, 42-1-1JJ Bottom	1/12/2017	Soil		x
Spectrum	1/17/2017	SC30526	42-1-1A North Sidewall, 42-1-1JI East Sidewall	1/13/2017	Soil		x
Spectrum	1/19/2017	SC30641	42-1-2BCD East Sidewall	1/17/2017	Soil		x
Spectrum	1/20/2017	SC30699	42-1-2S, 42-1-2AA to 42-1-GG, 42-1-2AA Bottom, 42-1-2BB Bottom, 42-1-2R (0-4' 4-8') South Sidewall, 42-1-2Q (0-4' 4-8') South Sidewall, 42-1-3AAA, 42-1-3BBB	1/18/2017	Soil		x
Spectrum	1/23/2017	SC30762	42-1-3CCC to 42-1-3GGG, 42-1-1OO to 42-1-1QQ, 42-1-1PQ North Sidewall	1/19/2017	Soil		x
Spectrum	1/24/2017	SC30817	42-1-2IJS East Sidewall	1/20/2017	Soil		x
Spectrum	1/30/2017	SC31022	42-1-1PPQQ North Sidewall, 42-1-3HHH to 42-1-3PPP, 42-1-3HHH South Sidewall, 42-1-3HHHJJJ West Sidewall, 42-1-3KKK West Sidewall, 42-1-3LLL North Sidewall	1/26/2017	Soil		x
Spectrum	1/31/2017	SC31072	42-1-3QQQ to 42-1-3VVV, 42-1-3VVV North Sidewall, 42-1-3AAAA & 42-1-3BBBB	1/27/2017	Soil		x
Spectrum	2/1/2017	SC31130	42-1-3CCCC to 42-1-3HHHH, 42-1-4ABC Bottom, 42-1-3-4DEF Bottom, 42-1-3-4GHI Bottom, 42-1-AAA, 42-1-1AAA Bottom	1/30/2017	Soil		x
Spectrum	2/7/2017	SC31310	42-1-34F South Sidewall, 42-1-3-4F, 42-1-4F Bottom, 42-1-2AAA to 42-1-2-BBB, 42-1-3JJJJ to 42-1-3MMMM, 42-1-2AAABBB Bottom, 42-1-3-4JK Bottom, 42-1-4LM Bottom	2/3/2017	Soil		x
Spectrum	2/8/2017	SC31345	42-1-1BBB to 42-1-1FFF, 42-1-1-3BCD Bottom, 42-1-1-3EF Bottom	2/6/2017	Soil		x
Spectrum	2/9/2017	SC31382	42-1-1BGH North Sidewall, 42-1-3GGHH North Sidewall, 42-1-3AG North Sidewall, 42-1-3HHH South Sidewall, 42-1-3AA South Sidewall, 42-1-3MMNN South Sidewall, 42-1-2CC South Sidewall, 42-1-2BB East Sidewall, 42-1-2CCDD East Sidewall	2/7/2017	Soil		x
Spectrum	2/10/2017	SC31428	42-1-2AAA South Sidewall, 421-1-2AAA East Sidewall, 42-1-2BBB East Sidewall, 42-1-3GG West Sidewall, 42-1-3BBDDEE West Sidewall	2/8/2017	Soil		x
Spectrum	2/17/2017	SC31593	42-1-2DDEE (0-6') East Sidewall, 42-1-2DDEE (6-10') East Sidewall, 42-1-2DDEE	2/15/2017	Soil		x

Table C-3.3
Analytical Methods for Each Sample

Spectrum	2/23/2017	SC31771	42-1-1EEE North Sidewall 9-13', 42-1-1FFF North Sidewall 9-13'	2/21/2017	Soil		x

Notes:

Table C-3.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
			ALL OHM FOR ALL SAMPLES MET CAM REPORTING LIMIT
			REQUIREMENTS

Table C-3.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 11-29-16 / 42-1-3AA	16K1456	SW-846 8082A	Arocolor 1260: Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
Soil / 12-6-16 / 42-1-1E, 42-1-1I, 42-1-1J	SC29196	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 12-7-16 / 42-1-3AA	SC29258	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 12-13-16 / 42-1-3PP, 42-1-3RR	SC29498	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-11-17 / 42-1-2N South Sidewall	SC30393	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-11-17 / 42-1-3OP Sidewall	SC30393	SW-846 8082A	Arocolor 1260, 1262, 1268: The Reporting Limit has been raised to account for matrix interference.
Soil / 1-12-17 / 42-1-1AA	SC30464	SW-846 8082A	Arocolor 1254, 1254 (2C): The Reporting Limit has been raised to account for matrix interference.
Soil / 1-12-17 / 42-1-1AA	SC30464	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-12-17 / 42-1-1MM	SC30464	SW-846 8082A	Arocolor 1260: Difference between the two GC columns is greater than 40%.
Soil / 1-18-17 / 42-1-2AA	SC30699	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-18-17 / 42-1-3AAA	SC30699	SW-846 8082A	Arocolor 1016, 1221, 1232, 1242, 1248, 1254: The Reporting Limit has been raised to account for matrix interference.
Soil / 1-18-17 / 42-1-3AAA	SC30699	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-18-17 / 42-1-3AAA	SC30699	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 1-26-17 / 42-1-3HHH	SC31022	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 2-3-17 / 42-1-3-4F	SC31310	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 2-3-17 / 42-1-2BBB	SC31310	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 2-3-17 / 42-1-3-4LM Bottom	SC31310	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 2-6-17 / 42-1-1BBB	SC31345	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds
Soil / 2-6-17 / 42-1-1-3BCD Bottom	SC31345	SW-846 8082A	Decachlorobiphenyl (Sr): The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 2-6-17 / 42-1-1-3EF Bottom	SC31345	SW-846 8082A	The Reporting Limit has been raised to account for matrix interference: Arocolor 1260, 1262, and 1268.
Soil / 2-7-17 / 42-1-2BB East Sidewall	SC31382	SW-846 8082A	The Reporting Limit has been raised to account for matrix interference: Arocolor 1016, 1221, 1232, 1242, 1248, 1254

Table C-4.1
Summary of Laboratory Reports for Coal Tar Remediation

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date	Environmental Media	Chain of Custody?	Field Notes Available	GEC File Number	Description
Contest	1/12/2016	16A0285	Yes	Yes	1/7/2016	Soil	Yes	Yes	RGP345.1	RGP 3, 4, 5
Contest	1/19/2016	16A0175	Yes	No	1/7/2016	Soil	Yes	Yes	RGP345.2	RGP 3, 4, 5
Contest	3/2/2016	16C0033	Yes	Yes	3/1/2016	Soil	Yes	Yes	RGP345.3	RGP-345-E
Contest	3/8/2016	16C0102	No	Disp. Crit.	3/2/2016	Soil	Yes	Yes	RGP345.SP5	RGP-345-SP5
Contest	3/7/2016	16C0217	Yes	Yes	3/4/2016	Soil	Yes	Yes	RGP345.4	RGP-345-B
Contest	3/11/2016	16C0354	No	Disp. Crit.	3/1/2016	Soil	Yes	Yes	RGP345.5	RGP-345-E
Contest	3/11/2016	16C0355	Yes	Yes	3/4/2016	Soil	Yes	Yes	RGP345.6	RGP-345-B
Contest	3/11/2016	16C0399	Yes	Yes	3/9/2016	Soil	Yes	Yes	RGP345.7	RGP-345-B1, N2
Contest	3/15/2016	16C0452	Yes	Yes	3/10/2016	GW	Yes	Yes	RGP345.8	RGP345- MW-100, FILTERED
Contest	3/21/2016	16C0843	Yes	Yes	3/18/2016	Soil	Yes	Yes	RGP345.9	RGP345- E2, B2
Contest	4/4/2016	16D0019	Yes	Yes	4/1/2016	Soil	Yes	Yes	RGP345.10	RGP345- B3, SE, B4, E3
Contest	4/7/2016	16D0144	Yes	Yes	4/5/2016	Soil	Yes	Yes	RGP345.11	RGP345- E4, B5, SE1, B6
Contest	4/11/2016	16D0352	No	Disp. Crit.	4/8/2016	Soil	Yes	Yes	RGP345.12	RGP345- SE2, B7
Contest	4/20/2016	16D0837	Yes	Yes	4/19/2016	Soil	Yes	Yes	RGP345.13	RGP345- B8, SE3, 42-4-75
Contest	4/22/2016	16D0979	No	Disp. Crit.	4/21/2016	Soil	Yes	Yes	RGP345.14	RGP345- SE4, SE5, B9
Contest	4/27/2016	16D1201	No	Disp. Crit.	4/26/2016	Soil	Yes	Yes	RGP345.15	RGP345- S1, E5, B11, B10, W1
Contest	5/2/2016	16D1381	No	Disp. Crit.	4/29/2016	Soil	Yes	Yes	RGP345.16	RGP345- W2
Contest	5/2/2016	16D1382	No	Disp. Crit.	4/29/2016	Soil	Yes	Yes	RGP345.17	RGP345- B12, S2, W3
Contest	5/7/2016	16E0181	Yes	Yes	5/6/2016	Soil	Yes	Yes	RGP345.18	RGP345- B13, S3
Contest	5/18/2016	16E0507	No	Disp. Crit.	5/12/2016	Soil	Yes	Yes	RGP345.19	RGP345- G
Contest	5/18/2016	16E0735	Yes	Yes	5/17/2016	Soil	Yes	Yes	RGP345.20	RGP345- G2
Contest	5/23/2016	16E0769	No	Disp. Crit.	5/12/2016	Soil	Yes	Yes	RGP345.21	RGP345- G
Contest	5/23/2016	16E0804	No	Disp. Crit.	5/18/2016	Soil	Yes	Yes	RGP345.22	RGP345- G1A, G2A
Contest	5/24/2016	16E0982	Yes	Yes	5/23/2016	Soil	Yes	Yes	RGP345.23	RGP345- Overdig East, North, Bottom
Contest	6/9/2016	16F0445	Yes	Yes	6/8/2016	Soil	Yes	Yes	RGP345.24	RGP345- B14, 42-4-2B2
Contest	6/13/2016	16F0606	Yes	Yes	6/10/2016	Soil	Yes	Yes	RGP345.25	RGP345- NI
Contest	6/15/2016	16F0640	Yes	Yes	6/13/2016	Soil	Yes	Yes	RGP345.26	RGP345- 42-2-BB3, B15, S4
Contest	6/20/2016	16F0844	Yes	Yes	6/13/2016	Soil	Yes	Yes	RGP345.27	RGP345- B15, S4
Contest	6/17/2016	16F0871	Yes	Yes	6/16/2016	Soil	Yes	Yes	RGP345.28	RGP345- B16
Contest	6/20/2016	16F0928	Yes	Yes	6/17/2016	Soil	Yes	Yes	RGP345.29	RGP345- B17
Contest	6/22/2016	16F1022	Yes	Yes	6/20/2016	Soil	Yes	Yes	RGP345.30	RGP345- SP7B, W4
Contest	6/27/2016	16F1211	Yes	Yes	6/23/2016	Soil	Yes	Yes	RGP345.31	RGP345- B18
Contest	6/28/2016	16F1347	No	Disp. Crit.	6/27/2016	Soil	Yes	Yes	RGP345.32	RGP345- 19, 20
Contest	6/29/2016	16F1412	Yes	Yes	6/27/2016	Soil	Yes	Yes	RGP345.33	RGP345- S5
Contest	7/13/2016	16G0423	Yes	Yes	7/11/2016	Soil	Yes	Yes	RGP345.34	RGP345- B21, N2, CLAY
Contest	7/14/2016	16G0534	Yes	Yes	7/13/2016	Soil	Yes	Yes	RGP345.35	RGP345- E7, B22
Contest	7/15/2016	16G0581	Yes	Yes	7/14/2016	Soil	Yes	Yes	RGP345.36	RGP345- B23, N3
Contest	7/21/2016	16G0790	Yes	Yes	7/19/2016	Soil	Yes	Yes	RGP345.37	RGP345- B24, SP6BS Treated
Contest	7/20/2016	16G0817	Yes	Yes	7/19/2016	Soil	Yes	Yes	RGP345.38	RGP345- B25
Contest	7/26/2016	16G0962	Yes	Yes	7/21/2016	Soil	Yes	Yes	RGP345.39	RGP345- B21-SPW, SPE
Contest	8/4/2016	16H0142	Yes	Yes	8/2/2016	Soil	Yes	Yes	RGP345.40	RGP345- B26-29, N4-5
Contest	8/5/2016	16H0214	Yes	Yes	8/4/2016	Soil	Yes	Yes	RGP345.41	RGP345- E8
Contest	8/8/2016	16H0285	Yes	Yes	8/5/2016	Soil	Yes	Yes	RGP345.42	RGP345- B30-32, W5, S6, N6-7
Contest	9/28/2016	16I1113	Yes	Yes	9/26/2016	Soil	Yes	Yes	RGP10A.1	S1-5, W5-6, B6-17

Table C-4.1
Summary of Laboratory Reports for Coal Tar Remediation

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date	Environmental Media	Chain of Custody?	Field Notes Available	GEC File Number	Description
Contest	9/30/2016	16I1301	Yes	Yes	9/29/2016	Soil	Yes	Yes	RGP10A.2	B18-22, N1, W7

Table C-4.2
Completion of Sampling Plan(s), Consistency with Sampling Plan(s) and Consistency with Standard Operating Procedures

Actual or Proposed Sample	Issue 1: Work not Completed as Planned	Issue 2: Deviations from Sampling Plan or SOP
	None identified	None identified

Table C-4.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	Flash Point SW-846 1010A	SW-846 1311 / 6010C TCLP lead	Ignitab. SW-846 1030	Spec. Cond. SM21-22 2510B	13 MA Metals SW-846 6010C	Mercury SW-846 7471B	Organ. Pest. SW-846 8081B	PCBs SW-846 8082A	TPH SW-846 8100 Modified	Herbic. SW-846 8151A	VOCs SW-846 8260C	SVOCs SW-846 8270D	Cyanide SW-846 9014	Sulfides SW-846 9030A	pH SW-846 9045C	Sp. Cond. SM21-22 2510B Mod.	Solids SM 2540G
Con-Test	1/12/2016	16A0285	RGP 3, 4, 5	1/7/2016	Soil										X									X
Con-Test	1/19/2016	16A0175	RGP 3, 4, 5	1/7/2016	Soil			X	X	X			X			X			X	X	X	X	X	X
			RGP 3, 4, 5															X						X
Con-Test	3/7/2016	16C0217	RGP-345-B	3/1/2016	Soil	X																		X
Con-Test	3/8/2016	16C0033	RGP-345-E	3/4/2016	Soil	X																		X
Con-Test	3/8/2016	16C0102	RGP-345 SP-5	3/2/2016	Soil			X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
Con-Test	3/11/2016	16C0354	RGP-345-E	3/1/2016	Soil									X										X
Con-Test	3/11/2016	16C0355	RGP-345-B	3/4/2016	Soil									X										X
Con-Test	3/11/2016	16C0452	RGP-345-B1	3/9/2016	Soil	X								X										X
			RGP-345-N2	3/9/2016		X			X															X
Con-Test	3/15/2016	16C0452	Unk MW-100	3/10/2016	GW									X										
			Unk MW-100 Unfiltered	3/10/2016										X										
Con-Test	3/21/2016	16C0843	RGP-345-E2	3/18/2016	Soil	X								X										X
			RGP-345-B2			X								X										X
Con-Test	4/4/2016	16D0019	RGP-345-B3	4/1/2016	Soil	X								X										X
			RGP-345-SE			X								X										X
			RGP-345-B4			X								X										X
			RGP-345-E3			X								X										X
Con-Test	4/7/2016	16D0144	RGP-345-E4	4/5/2016	Soil	X								X										X
			RGP-345-B5			X								X										X
			RGP-345-SE1			X								X										X
			RGP-345-B6			X								X										X
Con-Test	4/20/2016	16D0837	RGP-345-SE2		Soil	X								X										X
			RGP-345-B7			X								X										X
Con-Test	4/20/2016	16D0837	RGP-345-B8		Soil	X								X										X
			RGP-345-SE3			X								X										X
			42-4-75											X					X					X
Con-Test	4/22/2016	16D1201	RGP-345-SE4	4/21/2016	Soil	X								X										X
			RGP-345-SE5			X								X										X
			RGP-345-B9			X								X										X
Con-Test	4/27/2016	16D1201	RGP-345-S1	4/26/2016	Soil	X								X										X
			RGP-345-E5			X								X										X
			RGP-345-B11			X								X										X
			RGP-345-B10			X								X										X
			RGP-345-W1			X								X										X
Con-Test	5/2/2016	16D1381	RGP-345-W2	4/29/2016	Soil	X								X										X
Con-Test	5/2/2016	16D1382	RGP-345-B12	4/29/2016	Soil	X								X										X
			RGP-345-S2			X								X										X
			RGP-345-W3			X								X										X
	5/7/2016	16E0181	RGP-345-B13	5/6/2016	Soil	X								X										X
			RGP-345-S3			X								X										X
Con-Test	5/18/2016	16E0507	RGP-345-G	5/12/2016	Soil				X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Con-Test	5/18/2016	16E0508	RGP-345-G	5/12/2016					X									X						X
Con-Test	5/18/2016	16E0735	RGP-345-G2	5/17/2016	Soil													X						X
Con-Test	5/23/2016	16E0769	RGP-345-G	5/12/2016	Soil				X					X										
Con-Test	5/23/2016	16E0804	RGP-345-G1A	5/18/2016	Soil				X					X										X
Con-Test	5/23/2016	16E0804	RGP-345-G2A	5/18/2016	Soil				X					X										X
Con-Test	5/24/2016	16E0982	Over Dig East Sidewall	5/23/2016	Soil	X								X										X
			Over Dig North Sidewall			X								X										X
			Over Dig Bottom			X								X										X
Con-Test	6/9/2016	16F0445	RGP-345-B14	6/8/2016	Soil	X																		X
			42-4-2B2																X					X
Con-Test	6/13/2016	16F0606	RGP-345-NI	6/10/2016	Soil	X																		X
Con-Test	6/15/2016	16F0640	42-2-7BB3	6/13/2016	Soil				X															X
			RGP-3345-B15			X																		X
			RGP-3345-S4			X																		X
Con-Test	6/20/2016	16F0844	RGP-3345-B15	6/13/2016	Soil									X										X
			RGP-3345-S4											X										X
Con-Test	6/17/2016	16F0871	RGP-345-B16	6/16/2016	Soil	X								X										X
	6/20/2016	16F0928	RGP-345-B17	6/17/2016	Soil	X								X										X
	6/22/2016	16F1022	42-2-SP7B	6/20/2016	Soil				X															X
			RGP-345-W4			X								X										X
Con-Test	6/27/2016	16F1211	RGP-345-B18	6/23/2016	Soil	X								X										X
Con-Test	6/28/2016	16F1347	RGP-345-19	6/27/2016	Soil	X								X										X
			RGP-345-20			X								X										X

Table C-4.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	Flash Point SW-846 1010A	SW-846 1311 / 6010C TCLP lead	Ignitab. SW-846 1030	Spec. Cond. SM21-22 2510B	13 MA Metals SW-846 6010C	Mercury SW-846 7471B	Organ. Pest. SW-846 8081B	PCBs SW-846 8082A	TPH SW-846 8100 Modified	Herbic. SW-846 8151A	VOCs SW-846 8260C	SVOCs SW-846 8270D	Cyanide SW-846 9014	Sulfides SW-846 9030A	pH SW-846 9045C	Sp. Cond. SM21-22 2510B Mod.	Solids SM-2540G
Con-Test	6/29/2016	16F1412	RGP-345-S5	6/27/2016	Soil	X								X										X
Con-Test	7/13/2016	16G0423	RGP-345-B21	7/11/2016	Soil	X								X										X
			RGP-345-N2			X								X										X
			RGP-345-Clay			X								X										X
Con-Test	7/14/2016	16G0534	RGP-345-E7	7/13/2016	Soil	X								X										X
			RGP-345-B22			X								X										X
Con-Test	7/15/2016	16G0581	RGP-34S-B23	7/14/2016	Soil	X								X										X
			RGP-34S-N3			X								X										X
Con-Test	7/21/2016	16G0790	RGP-345-B24	7/19/2016	Soil	X								X										X
			42-2-SP6BS-treated						X															X
Con-Test	7/20/2016	16G0817	RGP-345-B25	7/19/2016	Soil	X								X										X
Con-Test	7/26/2016	16G0962	RGP-345-B21-SPW	7/21/2016	Soil				X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
			RGP-345-B21-SPE						X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Con-Test	8/4/2016	16H0142	RGP-345-B26	8/2/2016	Soil	X								X										X
			RGP-345-B27			X								X										X
			RGP-345-B28			X								X										X
			RGP-345-B29			X								X										X
			RGP-345-N4			X								X										X
			RGP-345-N5			X								X										X
Con-Test	8/5/2016	16H0214	RGP-345-E8	8/4/2016	Soil	X								X										X
Con-Test	8/8/2016	16H0285	RGP-345-B30	8/5/2016	Soil	X								X										X
			RGP-345-B31			X								X										X
			RGP-345-B32			X								X										X
			RGP-345-W5			X								X										X
			RGP-345-W6			X								X										X
			RGP-345-N6			X								X										X
			RGP-345-N7			X								X										X
Con-Test	9/28/2016	16I1113	S1	9/26/2016	Soil														X					X
			S2																X					X
			S3																X					X
			S4																X					X
			S5																X					X
			W5																X					X
			W6																X					X
			B6																X					X
			B7																X					X
			B8																X					X
			B9																X					X
			B10																X					X
			B11																X					X
			B12																X					X
			B13																X					X
			B14																X					X
			B15																X					X
			B16																X					X
			B17																X					X
Con-Test	9/30/2016	16I1301	B18	9/29/2016	Soil														X					X
			B19																X					X
			B20																X					X
			B21																X					X
			N1																X					X
			W7																X					X

Notes: * Sample analyzed for PCBs via USEPA Method 8082A without Soxhlet extraction.
X - PAH: Samples were analyzed for polycyclic aromatic hydrocarbons (PAHs) only and not for the full suite of semi-volatile organic compounds.
X - Pb or X - Cd: Samples were analyzed for lead (Pb) or cadmium (Cd) only, and not for the full suite of MA14 metal.s
The following analytical methods are CAM methods: MADEP-EPH-04-1.1, MADEP-VPH-04-1.1, 6010C, 7471B, 8081B, 8082A, 8151A, 8260C and 8270D.

Table C-4.4
OHM for Specific Samples not Meeting CAM Reporting Limit Requirements

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 1-7-16 / RGP 3, 4, 5	16A0285	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 1-7-16 / RGP 345 SP-5	16C0102	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 4-1-16 / RGP 345-SE, B4, E3	16D0019-02[RGP-345-SE], 16D0019-03[RGP-345-B4], 16D0019-04[RGP-345-E3]	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 4-5-16 / RGP 345-SE, B4, E4	16D0144-03[RGP-345-SE1], 16D0144-04[RGP-345-B6]	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 4-19-16 / RGP 345-B8, SE3	16D0837-01[RGP-345-B8], 16D0837-02[RGP-345-SE3]	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 4-21-16 / All Samples	16D0979-01[RGP-345-SE4], 16D0979-02[RGP-345-SE5], 16D0979-03[RGP-345-B9]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 4-26-16 / All Samples	16D1201-01[RGP-345-S1], 16D1201-02[RGP-345-E5], 16D1201-03[RGP-345-B11], 16D1201-04[RGP-345-B10], 16D1201-05[RGP-345-W1]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8151A	Elevated reporting limit due to matrix.
Soil / 5-12-16 / RGP-345-G	16E0507-02[RGP-345-G]	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 5-18-16 / All Samples	16E0507-02[RGP-345-G1A, G2A]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 5-23-16 / All Samples	16E0982-01[Over Dig East Sidewall], 16E0982-02[Over Dig North Sidewall], 16E0982-03[Over Dig Bottom]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 6-13-16 / All Samples	16F0844-01[RGP-3345-B15], 16F0844-02[RGP-3345-S4]	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 6-16-16 / RGP-345-B16	16F0871-01[RGP-345-B16]	SW-846 8081B	Elevated reporting limit due to matrix interference.
Soil / 6-27-16 / RGP-345-19, 20	16F1347-01[RGP-345-19], 16F1347-02[RGP-345-20]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 7-13-16 / RGP-345-E7	16G0534-01RE1[RGP-345-E7]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 7-13-16 / RGP-345-N3	16G0581-02[RGP-34S-N3]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-02[RGP-345-B21-SPW]	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-02[RGP-345-B21-SPE]	SW-846 8260C	1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2-Dibromo-3-chloropropane (DBCP), Bromoform, Naphthalene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-2-16 / RGP-345-N4, N5	16H0142-05[RGP-345-N4], 16H0142-06[RGP-345-N5]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 8-5-16 / RGP-345-S6, N6	16H0285-05[RGP-345-S6], 16H0285-06[RGP-345-N6]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 9-26-16 / All Samples	All Samples	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8100	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	1,4-Dioxane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	Tetrahydrofuran: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	1,2-Dibromo-3-chloropropane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	Bromoform: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-02[RGP-3,4,5]	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	Aniline: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	2,4,6-Tribromophenol: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	2-Fluorobiphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	2-Fluorophenol: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	Nitrobenzene-d5: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	Phenol-d6: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 1-7-16 / RGP 3, 4, 5	16A0175-01[RGP-3,4,5]	SW-846 8270D	p-Terphenyl-d14: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-1-16 / RGP 345-E	16C0354-01[RGP-345-E]	SW-846 8081B	Elevated reporting limit due to matrix.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	Antimony: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	4,4'-DDT: Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	Endosulfan Sulfate [2C]: Sample RPD between primary and confirmatory analysis exceeded 100%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	Decachlorobiphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	Tetrachloro-m-xylene: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8081B	Tetrachloro-m-xylene [2C]: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8082A	Tetrachloro-m-xylene: Surrogate recovery is outside of control limits on confirmatory column, but within control limits on primary column. Data validation is not affected
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8151A	Elevated reporting limit due to matrix.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8151A	Dinoseb [2C]: Initial continuing calibration standard was within method criteria. Closing continuing calibration standard was outside of method criteria, biased on the low side. Reanalysis was not performed due to site historical knowledge of matrix interference.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8151A	2,4-Dichlorophenylacetic acid: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8151A	2,4-Dichlorophenylacetic acid (2C): The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-02[RGP-345 SP-5]	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 3-2-16 / RGP 345-SP-5	16C0102-02[RGP-345 SP-5]	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	1,2-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	1,3-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	1,4-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	Hexachloroethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	Pentachlorophenol: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	3,3-Dichlorobenzidine: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 3-2-16 / RGP 345-SP-5	16C0102-01[RGP-345 SP-5]	SW-846 8270D	Di-n-octylphthalate: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 3-2-16 / RGP 345-B1	16C0399-01[RGP-345-B1]	SW-846 8081B	Elevated reporting limit due to matrix.
Soil / 4-5-16 / RGP 345-SE1	16D0144-03[RGP-345-SE1]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample accurate
Soil / 4-19-16 / RGP 345-SE2	16D0352-01[RGP-345-SE2]	SW-846 8081B	Endosulfan Sulfate [2C]: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was
Soil / 4-19-16 / RGP 345-SE2	16D0352-01[RGP-345-SE2]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 4-19-16 / RGP 345-42-4-75	16D0837-01[RGP-345-42-4-75	SW-846 8270D	Benzo(g,h,i)perylene: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 4-21-16 / RGP 345-SE4, SE5	16D0979-01[RGP-345-SE4], 16D0979-02[RGP-345-SE5]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract
Soil / 4-26-16 / RGP 345-E5	16D1201-02[RGP-345-E5]	SW-846 8081B	4,4'-DDE: Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
Soil/ 4/26/16 RGP345-S1, E5, B11	16D1201-01[RGP-345-S1], 16D1201-02[RGP-345-E5], 16D1201-03[RGP-345-B11]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract
Soil/ 4/29/16 RGP345-W2	16D1381-01[RGP-345-W2]	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil/ 4/29/16 RGP345-W2	16D1381-01[RGP-345-W2]	SW-846 8081B	Dieldrin: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious
Soil/ 4/29/16 RGP345-All Samples	16D1382-01[RGP-345- B12], 16D1382-02[RGP-345- S2], 16D1382-03[RGP-345- W3]	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 6010C-D	Zinc: Analyte is found in the associated blank as well as in the sample.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 6010C-D	Zinc: Data is not affected by elevated level in blank since sample result is >10x level found in the blank.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8081B	Chlordane and Chlordane (2C): Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8081B	Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8081B	4,4'-DDT [2C] and Endosulfan Sulfate [2C]: Sample RPD between primary and confirmatory analysis exceeded 100%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8081B	Decachlorobiphenyl and Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8082A	A dilution was performed as part of the standard analytical procedure.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8151A	2,4-Dichlorophenylacetic acid and 2,4-Dichlorophenylacetic acid [2C]: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8260C	1,4-Dioxane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8260C	1,2,3-Trichlorobenzene, 1,2-Dichloroethane, 1,4-Dioxane, Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
Soil / 5-12-16 / RGP-345-G	16E0507-01[RGP-345-G]	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-18-16 / RGP-345-G1A, 2A	16E0804-01[RGP-345-G-1A], 16E0804-02[RGP-345-G-2A]	SW-846 8081B	delta-BHC and delta-BHC (2C): Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-18-16 / RGP-345-G1A, 2A	16E0804-01[RGP-345-G-1A], 16E0804-02[RGP-345-G-2A]	SW-846 8081B	Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, V: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 5-23-16 / RGP-345-B14	16F0445-01[RGP-345-B14]	MADEP-EPH-04-1.1	2-Methylnaphthalene, C11-C22 Aromatics, Naphthalene, Unadjusted C11-C22 Aromatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 5-23-16 / 42-4-2B2	16F0445-02[42-4-2B2]	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 5-23-16 / 42-4-2B2	16F0445-02[42-4-2B2]	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 6-20-16 / RGP-345-W4	16F1022-02[RGP-345-W4]	SW-846 8081B	4,4'-DDE and 4,4'-DDE (2C): Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 6-20-16 / RGP-345-S5	16F1412-01[RGP-345-S5]	MADEP-EPH-04-1.1	2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, C11-C22 Aromatics, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene, Unadjusted C11-C22 Aromatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 6-20-16 / RGP-345-S5	16F1412-01[RGP-345-S5]	SW-846 8081B	4,4'-DDT: Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
Soil / 7-11-16 / RGP-345-B21, N2, Clay	16G0423-01[RGP-345-B21], 16G0423-02[RGP-345-N2], 16G0423-03[RGP-345-Clay]	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 7-11-16 / RGP-345-Clay	16G0423-03[RGP-345-Clay]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 7-13-16 / RGP-345-E7	16G0534-01RE1[RGP-345-E7]	SW-846 8081B	4,4'-DDD [2C]: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 7-13-16 / RGP-345-E7	16G0534-01RE1[RGP-345-E7]	SW-846 8081B	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-03[RGP-345-B21-SPE]	SW-846 6010C-D	Antimony: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-03[RGP-345-B21-SPE]	SW-846 6010C-D	Barium and Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-01RE1[RGP-345-B21-SPW]	SW-846 8082A	Aroclor-1242 and Aroclor-1242 (2C): Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-01RE1[RGP-345-B21-SPW]	SW-846 8082A	Decachlorobiphenyl [2C]: The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
Soil / 7-21-16 / RGP-345-B21-SPE and SPW	16G0962-01[RGP-345-B21-SPW], 16G0962-03[RGP-345-B21-SPE]	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-03[RGP-345-B21-SPE]	SW-846 8260C	Naphthalene: Reported result is estimated. Value reported over verified calibration range.
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-01RE1[RGP-345-B21-SPW]	SW-846 8082A	Bromomethane and Chloromethane: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-03[RGP-345-B21-SPE]	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-01RE1[RGP-345-B21-SPW]	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 7-21-16 / RGP-345-B21-SPW	16G0962-01RE1[RGP-345-B21-SPW]	SW-846 8260C	1,2,3-Trichlorobenzene, 1,2-Dibromo-3-chloropropane (DBCP), 1,4-Dioxane, 2-Butanone (MEK), 2-Hexanone (MBK), 4-Methyl-2-pentanone (MIBK), Bromomethane, Chloromethane, Naphthalene, Tetrahydrofuran: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 7-21-16 / RGP-345-B21-SPE and SPW	16G0962-01[RGP-345-B21-SPW], 16G0962-03[RGP-345-B21-SPE]	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported results.
Soil / 7-21-16 / RGP-345-B21-SPE and SPW	16G0962-01[RGP-345-B21-SPW], 16G0962-03[RGP-345-B21-SPE]	SW-846 8270D	2,4,6-Tribromophenol, 2-Fluorobiphenyl, 2-Fluorophenol, Nitrobenzene-d5, Phenol-d6, p-Terphenyl-d14: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 7-21-16 / RGP-345-B21-SPE	16G0962-03[RGP-345-B21-SPE]	SW-846 8270D	Phenol: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 7-21-16 / RGP-345-B21-SPE and SPW	16G0962-01[RGP-345-B21-SPW], 16G0962-03[RGP-345-B21-SPE]	SW-846 9045C	pH: Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.
Soil / 8-2-16 / RGP-345-N5	16H0142-06[RGP-345-N5]	SW-846 8081B	Decachlorobiphenyl and Decachlorobiphenyl (2): Surrogate recovery is outside of control limits. Data validation is not affected since all associated results are less than the reporting limit and bias is on the high side.
Soil / 8-5-16 / RGP-345-W5	16H0285-04[RGP-345-W5]	SW-846 8081B	4,4'-DDE [2C], 4,4'-DDT, Dieldrin [2C]: Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
Soil / 8-5-16 / RGP-345-B30, B31, B32, W5, W6, S6, N6, N7	16H0285-01[RGP-345-B30], 16H0285-02[RGP-345-B31], 16H0285-03[RGP-345-B32], 16H0285-04[RGP-345-W5], 16H0285-05[RGP-345-S6], 16H0285-06[RGP-345-N6], 16H0285-07[RGP-345-N7]	SW-846 8081B	delta-BHC and delta-BHC [2C]: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 8-5-16 / RGP-345-B30, B31, B32, W5, W6, S6, N6, N7	16H0285-01[RGP-345-B30], 16H0285-02[RGP-345-B31], 16H0285-03[RGP-345-B32], 16H0285-04[RGP-345-W5], 16H0285-05[RGP-345-S6], 16H0285-06[RGP-345-N6], 16H0285-07[RGP-345-N7]	SW-846 8081B	4,4'-DDD and 4,4'-DDD (2C): Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-4.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-26-16 / S5	16I1113-16RE1[S5]	SW-846 8270D	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
Soil / 9-26-16 / B8	16I1113-05RE2[B8]	SW-846 8270D	2-Fluorobiphenyl, Nitrobenzene-d5, p-Terphenyl-d14: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
Soil / 9-29-16 / B21	16I1301-04[B21]	SW-846 8270D	Dibenz(a,h)anthracene and Indeno(1,2,3-cd)pyrene: Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Table C-5.1
Summary of Laboratory Reports used to support the Phase I Initial Site Investigation

Laboratory	Laboratory Report Date	Laboratory Report Identifier	CAM Worksheet Available?	Meets Presumptive Certainty?	Sample Date(s)	Environmental Media	Chain of Custody?	Field Notes Available
Con-Test	12/22/2011	11L0599	Yes	Yes	12/5/2011	Soil	Yes	No
Con-Test	8/25/2014	14H0790	Yes	Yes	8/18/2014	Soil	Yes	Yes
Con-Test	8/26/2014	14H0855	Yes	Yes	8/19/2014	Soil	Yes	Yes
Con-Test	8/26/2014	14H0858	Yes	Yes	8/19/2014	Soil	Yes	Yes
Con-Test	8/27/2014	14H0951	Yes	Yes	8/20/2014	Soil	Yes	Yes
Con-Test	9/9/2014	14H0953	Yes	Yes	8/20/2014	Soil	Yes	Yes
Con-Test	8/28/2014	14H1018	Yes	Yes	8/21/2014	Soil	Yes	Yes
Con-Test	8/28/2014	14H1021	Yes	Yes	8/21/2014	Soil	Yes	Yes
Con-Test	9/2/2014	14H1081	Yes	Yes	8/22/2014	Soil	Yes	Yes
Con-Test	9/3/2014	14H1086	Yes	Yes	8/22/2014	Soil	Yes	Yes
Con-Test	9/5/2014	14H1136	Yes	Yes	8/25/2014	Soil	Yes	Yes
Con-Test	9/3/2014	14H1137	Yes	Yes	8/25/2014	Soil	Yes	Yes
Con-Test	9/4/2014	14H1178	Yes	Yes	8/26/2014	Soil	Yes	Yes
Con-Test	9/4/2014	14G1179	Yes	Yes	8/26/2014	Soil	Yes	Yes
Con-Test	9/10/2014	14I0262	Yes	Yes	8/25/2014	Soil	Yes	Yes
Con-Test	9/18/2014	14I0659	Yes	Yes	8/22/2014	Soil	Yes	Yes
Con-Test	10/22/2014	14I1172	Yes	Yes	9/24/2014	Water	Yes	Yes
Con-Test	9/8/2015	15I0169	Yes	Yes	8/31/2015	Soil	Yes	No
Con-Test	9/8/2015	15I0178	Yes	Yes	9/1/2015-9/3/2015	Soil	Yes	No
Con-Test	9/3/2015	15I0444	Yes	Yes	8/31/2015-9/1/2015	Soil	Yes	No
Con-Test	12/10/2014	14L0289	Yes	Yes	12/5/2014	Soil	Yes	Yes
Con-Test	12/12/2014	14L0290	Yes	Yes	12/5/2014	Soil	Yes	Yes
Con-Test	12/12/2014	14L0404	Yes	Yes	12/8/2014	Soil	Yes	Yes
Con-Test	12/17/2014	14L0410	Yes	Yes	12/8/2014	Soil/Water	Yes	Yes
Con-Test	3/6/2015	15C0062	Yes	Yes	3/2/2015	Water	Yes	Yes
Con-Test	3/20/2015	15C0707	Yes	Yes	3/18/2015	Water	Yes	Yes
TestAmerica	1/10/2012	360-38432	Yes	Yes	12/29/2011	Soil	Yes	Yes

Table C-5.2
Completion of Sampling Plan(s), Consistency with Sampling Plan(s) and Consistency with Standard Operating Procedures

Actual or Proposed Sample	Issue 1: Work not Completed as Planned	Issue 2: Deviations from Sampling Plan or SOP
	None identified	None identified

Table C-5.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	SW-846 1010	SW-846 1311	SW-846 1030	SM18-20 2510B	SW-846 6010B	SW-846 6010C	SW-846 7471B	SW-846 7471A	SW-846 8015B	SW-846 8015C	SW-846 8081B	SW-846 8082A	SW-846 8100 Modified	SW-846 8151A	SW-846 8260C	SW-846 8270D	SW-846 9014	SW-846 9030A	SW-846 9045C	SW-846 7470A	SW-846 6020A	SM18-20 2340B	SM21-22 2510B Modified
Con-Test	12/22/2011	11L0599	TP-9 0-3ft	12/5/2011	Soil	X							X	X																
			TP-10 0-3ft		Soil	X							X	X																
			TP-10 3-6ft		Soil	X							X	X																
			TP-11 0-3ft		Soil	X							X	X																
			TP-12 0-3ft		Soil	X							X	X																
			TP-12 3-6ft		Soil	X							X	X																
Con-Test	8/25/2014	14H0790	HD-10 (0-18")	8/18/2014	Soil	X							X	X					X											
			HD-10 (3-5.5')		Soil	X							X	X					X											
Con-Test	8/26/2014	14H0855	HD-15 (0-18")	8/19/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	8/26/2014	14H0858	HD-15 (0-18")	8/19/2014	Soil														X											
			HD-15 (3-4.5')		Soil	X	X						X	X					X			X								
			HD-15 (6-9')		Soil	X	X						X	X					X			X								
			HD-15 (12-18')		Product/ Solid	X	X						X	X			X		X			X								
			HD-15 (22-23.5')		Soil	X							X	X																
			HD-6 (0-18")		Soil	X							X	X																
Con-Test	8/27/2014	14H0951	HD-22 (0-3')	8/20/2014	Soil	X							X	X																
			HD-22 (3-3.5')			X							X	X																
			HD-22 (7.5-14')			X							X	X																
			HD-22 (19-21')			X							X	X																
			HD-26 (0-2.5')			X							X	X																
			HD-26 (3-6')			X							X	X																
			HD-26 (6-7.5')			X							X	X																
			HD-26 (9-12')			X							X	X																
Con-Test	9/9/2014	14H0953	HD-26 (0-6')	8/20/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	8/28/2014	14H1018	HD-17 (0-18")	8/21/2014	Soil														X											
			HD-17 (4.5--6')			X							X	X					X											
			HD-17 (6-15')			X							X	X					X											
			HD-17 (15-21')																X											
			HD-19 (27-27'4")																X											
Con-Test			HD-17 (0-10.5')	8/21/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
			HD-17 (12-21')					X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	9/2/2014	14H1081	TP-202 (0-11')	8/22/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
			TP-204 (0-19')					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-206 (0-5')					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-207 (0-9')					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-208 (0-9')					X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	9/3/2014	14H1086	TP-201 (0-3')	8/22/2014	Soil								X																	
			TP-201 (3-6')										X																	
			TP-202 (0-3')										X																	
			TP-202 (3-6')										X																	
			TP-203 (0-3')										X																	
			TP-203 (3-6')										X																	
			TP-208 (5')			X	X												X			X								
			TP-207 (0-6')			X							X	X																
			TP-207 (6-9')			X							X	X																
			TP-207 (9-10.5')			X							X	X																
			TP-207 (10-12')			X							X	X																
Con-Test	9/5/2014	14H1136	TP-211 (0-2')	8/25/2014	Soil														X											
			TP-211 (3-6')																X											
			TP-211 (6-9')			X							X	X					X											
			TP-211 (9-12')			X							X	X					X											
			TP-211 (13-20')			X							X	X					X											
			TP-211 (20-22')			X							X	X					X											
			TP-212 (0-3')																X											
			TP-212 (3-6')																X											
			TP-212 (6-9')			X							X	X					X											
			TP-212 (11.5-14.5')			X							X	X					X											
			TP-212 (15-17')			X							X	X					X											
Con-Test	9/3/2014	14H1137	TP-211 (0-7')	8/25/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
			TP-212 (0-6')					X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	9/4/2014	14H1178	TP-213 (0-3')	8/26/2014	Soil	X													X											
			TP-213 (3-6')			X													X											
			TP-213 (6-11')			X							X	X					X											
			TP-216 (7-11')			X							X	X																
			TP-217 (0-2')			X							X	X																
Con-Test	9/4/2014	14G1179	TP-214 (0-12)	8/26/2014	Soil			X	X		X		X	X					X	X		X	X	X	X	X				
			TP-214 (13-21)					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-216 (0-6)					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-218 (0-11)					X	X		X		X	X					X	X		X	X	X	X	X				
			TP-218 (13-17)					X	X		X		X	X					X	X		X	X	X	X	X				
Con-Test	9/10/2014	14I0262	TP-212 (0-3)			X																								

Table C-5.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	SW-846 1010	SW-846 1311	SW-846 1030	SM18-20 2510B	SW-846 6010B	SW-846 6010C	SW-846 7471B	SW-846 7471A	SW-846 8015B	SW-846 8015C	SW-846 8081B	SW-846 8082A	SW-846 8100 Modified	SW-846 8151A	SW-846 8260C	SW-846 8270D	SW-846 9014	SW-846 9030A	SW-846 9045C	SW-846 7470A	SW-846 6020A	SM18-20 2340B	SM21-22 2510B Modified
			TP-212 (3-6)			X																								
Con-Test	9/18/2014	14I0659	HD-22 (9-12)	8/22/2014	Soil														X											
			HD-22 (17-19)																X											
			TP-201 (6-13)			X							X						X											
			TP-202 (6-14)										X						X											
			TP-203 (6-9)			X							X						X											
			TP-203 (15.5)			X							X						X											
			TP-204 (0-3)			X							X						X											
			TP-204 (3-6)			X							X						X											
			TP-204 (6-19)										X						X											
			TP-204 (19-20)										X						X											
			TP-205 (3-6)			X							X						X											
			TP-205 (8-9)			X							X						X											
			TP-216 (11-13)										X																	
			HD-22 (0-3)																X											
			HD-22 (3-3.5)																X											
			HD-22 (7.5-14)																X											
			HD-22 (19-21)																X											
			TP-201 (0-3)			X													X											
			TP-201 (3-6)			X													X											
			TP-202 (0-3)			X													X											
			TP-202 (3-6)			X													X											
			TP-203 (0-3)			X													X											
			TP-203 (3-6)			X													X											
Con-Test	10/22/2014	14I1172	MW-1	9/24/2014	Water	X	X												X			X	X				X	X	X	
			MW-2			X	X												X			X	X				X	X	X	
			MW-3			X	X												X			X	X				X	X	X	
Con-Test	9/8/2015	15I0169	37-1-1 N	8/31/2015	Soil				X				X																	
			37-1-2 N						X				X																	
			37-1-1 WA						X				X																	
			37-1-4 E						X				X																	
			37-1-4 S						X				X																	
Con-Test	9/8/2015	15I0178	37-1-7	9/1/2015	Soil								X																	
			37-1-5	9/2/2015									X																	
			37-1-6S	9/2/2015									X																	
			37-1-8B	9/3/2015									X																	
			37-1-8N	9/3/2015									X																	
			31-1-8S	9/3/2015									X																	
Con-Test	9/3/2015	15I0444	37-1-1 N	8/31/2015	Soil								X																	
			37-1-2 N	9/1/2015									X																	
			37-1-1 WA										X																	
			37-1-3 N										X																	
			37-1-3 B										X																	
			37-1-3E										X																	
			37-1-3 W										X																	
			37-1-4 E										X																	
			37-1-4 S										X																	
Con-Test	12/10/2014	14L0289	TP-308 (0-3ft)	12/5/2014	Soil								X																	
			TP-308 (3-6ft)										X																	
			TP-308 (6-9.5ft)										X																	
			TP-309 (0-3ft)										X																	
			TP-309 (3-6ft)										X																	
			TP-309 (6-15ft)										X																	
			TP-309 (15-17ft)										X																	
Con-Test	12/12/2014	14L0290	TP-315 (0-3ft)	12/5/2014	Soil														X											
			TP-314 (0-3ft)																X											
			TP-314 (3-6ft)																X											
			TP-314 (6-15ft)																X											
			TP-314 (15-16.5ft)																X											
			TP-313 (0-3ft)																X											
			TP-313 (3-6ft)																X											
			TP-313 (6-13ft)																X											
			TP-312 (0-3ft)																X											
			TP-312 (3-5ft)																X											
Con-Test	12/12/2014	14L0404	TP-310 (0-3ft)	12/8/2014	Soil								X																	
			TP-310 (3-6ft)										X																	
			TP-310 (6-15ft)										X																	
			TP-310 (15-20)										X																	
			TP-307 (0-3ft)										X																	
			TP-307 (3-6ft)										X																	
			TP-306 (0-3ft)										X																	
			TP-306 (3-6ft)										X																	
			TP-301 (0-3ft)										X																	
			TP-301 (3-6ft)										X																	

Table C-5.3
Analytical Methods for Each Sample

Laboratory	Laboratory Report Date	Laboratory Report Identifier	GEC Sample Identifiers	Sample Date	Environ-mental Media	MADEP-EPH-04-1.1	MADEP-VPH-04-1.1	SW-846 1010	SW-846 1311	SW-846 1030	SM18-20 2510B	SW-846 6010B	SW-846 6010C	SW-846 7471B	SW-846 7471A	SW-846 8015B	SW-846 8015C	SW-846 8081B	SW-846 8082A	SW-846 8100 Modified	SW-846 8151A	SW-846 8260C	SW-846 8270D	SW-846 9014	SW-846 9030A	SW-846 9045C	SW-846 7470A	SW-846 6020A	SM18-20 2340B	SM21-22 2510B Modified
			TP-301 (6-8ft)										X																	
			TP-301 (8-10ft)										X																	
			TP-302 (0-3ft)										X																	
			TP-302 (3-6ft)										X																	
			TP-302 (6-8ft)										X																	
			TP-302 (8-10ft)										X																	
			TP-303 (0-3ft)										X																	
			TP-303 (3-6ft)										X																	
			TP-303 (6-8ft)										X																	
			TP-303 (8-10ft)										X																	
			TP-304 (0-3ft)										X																	
			TP-304 (3-6ft)										X																	
			TP-304 (6-8ft)										X																	
			TP-304 (8-11ft)										X																	
			TP-318 (0-3ft)										X																	
			TP-318 (3-6ft)										X																	
			TP-318 (6-8ft)										X																	
			TP-318 (8-12ft)										X																	
Con-Test	12/17/2014	14L0410	TP-311 (0-3ft)	12/8/2014	Soil														X											
			TP-311 (3-6ft)																X											
			TP-311 (6-15ft)																X											
			TP-311 (15-26ft)																X											
			MW-3	12/8/2014	Water																							X		
Con-Test	3/6/2015	15C0062	MW-3	3/2/2015	Water																							X		
Con-Test	3/20/2015	15C0707	MW-GEC-3A-Tota	3/18/2015	Water																							X		
			MW-GEC-3A-Diss.																									X		
			MW-GEC-3B-Total																									X		
			MW-GEC-3B-Diss.																									X		
TestAmerica	1/10/2012	J38432-1	TP-21 0-3	12/29/2011	Soil	X						X			X				X	X		X	X							
			TP-21 3-E			X						X			X				X	X		X	X							
			TP-23 0-3			X						X			X															
			TP-23 3-E			X						X			X	X			X			X								

Table C-5.4
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	C9-C10 Aromatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	C9-C12 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	Ethylbenzene: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	Methyl tert-Butyl Ether (MBTE): Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	Unadjusted C5-C8 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	Unadjusted C9-C12 Aliphatics: Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	SW-846 8260C	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met.
Soil / 8-28-2014 / HD-17 (12-21')	14H1021-02	SW-846 8270D	Elevated reporting limit due to sample matrix interference. MA CAM reporting limit not met.
Soil / 9-2-2014 / TP-202 (0-11'), TP-206 (0-5'), TP-207 (0-9')	14H1081-01RE1, -3RE1, -04	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02RE1	SW-846 8270D	Elevated reporting limit due to high concentrations of target compounds. MA CAM reporting limit not met.
Soil / 9-4-2014 / TP-217 (0-2)	14H1178-05	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Elevated reporting limit due to sample matrix interference. MA CAM reporting limit not met.
Soil / 9-4-2014 / TP-214 (13-21), TP-216 (0-6), TP-218 (0-11), TP-218 (13-17)	14H1179-02, -02RE1, -03, -03RE1, -04, -04RE1, -05RE1	SW-846 8270D	Elevated reporting limit due to high concentration of target compounds. MA CAM reporting limit not met
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	1,2-Dibromo-3-chloropropane (DPC): Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	1,2-Dichloroethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Bromomethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Carbon Disulfide: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Chloromethane: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Methylene Chloride: Elevated reporting limit based on lowest point in calibration. MA CAM reporting limit not met.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil/ 8-25-2014 / HD-10 (0-18"), HD-10 (3-5.5')	14H0790-01, -02	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery ad duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	2-Butanone (MEK): Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	Acetone: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	2-Butanone (MEK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	2-Hexanone (MBK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	1,2-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	1,3-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	1,4-Dichlorobenzene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	Aniline: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-26-2014 / HD-15 (0-18")	14H0855-01	SW-846 8270D	Hexachloroethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	Soil/methanol ratio does not meet method specifications. Insufficient amount of soil. Data validation is not affected since a sufficient amount of preservative is present. Detection limits may be above useful levels.
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	2,5-Dibromotoluene (FID):The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	MADEP-VPH-04-1.1	2,5-Dibromotoluene (PID):The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences
Soil / 8-26-2014 / HD-15 (3'-4.5'), HD-6 (0-8')	14H0858-04	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	SW-846 6010C	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8082A	Aroclor-1260: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8082A	Aroclor-1260 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil/ 8-26-2014 / HD-15 (0-18")	14H0858-04	SW-846 8082A	Aroclor-1260: Matrix Spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
Soil/ 8-26-2014 / HD-15 (0-18")	14H0858-04	SW-846 8082A	Aroclor-1260 [2C]: Matrix Spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9'), HD-15 (12-18')	14H0858-04	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery ad duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	2-Butanone (MEK): Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	Acetone: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Product/Solid / 8-26-2014 / HD-15 (12-18')	14H0858-04	SW-846 8260C	Carbon Disulfide: Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	2-Butanone (MEK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	2-Hexanone (MBK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9')	14H0858-04	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-26-2014 / HD-15 (3-4.5'), HD-15 (6-9'), HD-15 (12-18')	14H0858-04	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 8-27-2014 / HD-26 (0-2.5')	14H0951-05	MADEP-EPH-04-1.1	C19-C36 Aliphatics: Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogenous sample aliquots cannot be eliminated.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery ad duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	1,2,4- Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	2-Butanone (MEK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	2-Hexanone (MBK): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-845 8270D	Butylbenzlphthalate: Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
Soil / 9-9-2014 / HD-26 (0-6')	14H0953-01	SW-845 8270D	Bis(2-Ethylhexyl)phthalate: Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the high side.
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Benzo(a)anthracene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Benzo(a)pyrene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Benzo(a)fluoranthene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Benzo(g,h,i)perylene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	C11-C12 Aromatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	C19-C36 Aliphatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	C9-C18 Aliphatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Fluoranthene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Indeno(1,2,3-cd)pyrene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Pyrene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (4.5-6'), HD-17 (6-15')	14H1018-02, -03	MADEP-EPH-04-1.1	Unadjusted C11-C12 Aromatics: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 8-28-2014 / HD-17 (0-18")	14H1018-01	SW-846 8082A	Aroclor-1262: Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard
Soil / 8-28-2014 / HD-17 (0-18")	14H1018-01	SW-846 8082A	Aroclor-1262 [2C]: Sample fingerprint does not match standard exactly. Sample was quantitated against the closest matching standard.
Soil / 8-28-2014 / HD-17 (6-15'), HD-19 (27-27'4")	14H1018-03, -05	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 8-28-2014 / HD-17 (12-21')	14H1021-02	SW-846 8082A	Aroclor-1260: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 8-28-2014 / HD-17 (12-21')	14H1021-02	SW-846 8082A	Aroclor-1260 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	Acetone: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	Acetone: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8270D	Dibenz(a,h)anthracene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 8270D	Bis(2-chloroisopropl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 8-28-2014 / HD-17 (0-10.5'), HD-17 (12-21')	14H1021-01, -02	SW-846 9045C	pH: Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.
Soil / 9-2-2014 / TP-207 (0-9')	14H1081-04	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Soil / 9-2-2014 / TP-202 (0-11')	14H1081-01	SW-846 7471B	Mercury: Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogenous sample aliquots cannot be eliminated.
Soil / 9-2-2014 / TP-202 (0-11')	14H1081-01	SW-846 8100 Modified	TPH (C9-C36): Matrix spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
Soil / 9-2-2014 / TP-202 (0-11'), TP-204 (0-19'), TP-206 (0-5'), TP-207 (0-9')	14H1081-01, -02, -03, -04	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	Naphthalene: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 9-2-2014 /All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	1,2,4-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced prevision and accuracy may be associated with reported result.
Soil / 9-2-2014 / TP-202 (0-11')	14H1081-01	SW-846 8270D	Aniline: Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogenous sample aliquots cannot be determined
Soil / 9-2-2014 / TP-202 (0-11')	14H1081-01RE1	SW-846 8270D	Phenanthrene: Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogenous sample aliquots cannot be determined
Soil / 9-2-2014 / TP-202 (0-11')	14H1081-01RE1	SW-846 8270D	Pyrene: Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogenous sample aliquots cannot be determined
Soil / 9-2-2014 / TP-202 (0-11'), TP-206 (0-5')	14H1081-01, -03	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 9-2-2014 / TP-202 (0-11'), TP-206 (0-5')	14H1081-01, -03	SW-846 8270D	Bis(2-chloroisopropl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8270D	4-Nitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 9-2-2014 / All Samples	14H1081-01, -02, -03, -04, -05	SW-846 8270D	Bis(2-chloroisopropyl)ether: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 9-2-2014 / TP-202 (0-11'), TP-204 (0-19')	14H1081-01, -02	SW-846 9045C	Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-3-2014 / TP-207 (0-6'), TP-207 (6-9'), TP-207 (10-12')	14H1086-08, -09, -11	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Soil / 9-3-2014 / TP-207 (0-6')	14H1086-08	SW-846 6010C	Antimony: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogenous sample aliquot cannot be eliminated
Soil / 9-3-2014 / TP-207 (0-6')	14H1086-08	SW-846 6010C	Barium: Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogenous sample aliquots cannot be eliminated
Soil / 9-3-2014 / TP-207 (0-6')	14H1086-08	SW-846 6010C	Nickel: Sample to spike ratio is greater than 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 9-3-2014 / TP-207 (0-6')	14H1086-08	SW-846 6010C	Vanadium: Sample spike ratio is greater than 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 9-3-2014 / TP-208 (5')	14H1086-07	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery ad duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 9-3-2014 / TP-208 (5')	14H1086-07	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 9-5-2014 / TP-211 (13-20'), TP-211 (13-20')	14H1136-05, -05RE1	MADEP-EPH-04-1.1	Chloroctadecane (COD): Surrogate recovery is outside of control limits, matrix interference suspected. Reanalysis yielded similar surrogate non-conformance.
Soil / 9-5-2014 / TP-212 (6-9'), TP-212 (11.5-14.5'), TP-212 (15-17')	14H1136-09, -10, -11	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Soil / 9-5-2014 / TP-212 (6-9'), TP-212 (11.5-14.5'), TP-212 (15-17')	14H1136-09, -10, -11	SW-846 8082A	Aroclor-1260: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 9-5-2014 / TP-212 (6-9'), TP-212 (11.5-14.5'), TP-212 (15-17')	14H1136-09, -10, -11	SW-846 8082A	Aroclor-1260 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 9-5-2014 / TP-211 (0-2'), TP-211 (3-6'), TP-211 (6-9'), TP-211 (9-12'), TP-211 (13-20'), TP-211 (20-22'), TP-212 (0-3'), TP-212 (3-6')	14H1136-01, -02, -03, -04, -05, -06, -07, -08	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 6010C	Silver: Elevated reporting limit due to high concentration of an interfering analyte(s).
Soil / 9-3-2014 / TP-211 (0-7')	14H1137-01	SW-846 6010C	Lead: Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported results or non-homogenous sample aliquot cannot be eliminated
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-3-2014 / TP-212 (0-6')	14H1137-02	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	1,4-Dioxane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	Chloromethane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	Methylene Chloride: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	Trichlorofluoromethane (Freon 11): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced prevision and accuracy may be associated with reported result.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8270D	Analine: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 9-3-2014 / TP-211 (0-7'), TP-212 (0-6')	14H1137-01, -02	SW-846 8270D	2,4-Dinitrophenol: Initial calibration did not meet method specifications. Compound calibrated using a response factor where %RSD is outside of method specified criteria.
Soil / 9-3-2014 / TP-212 (0-6')	14H1137-02	SW-846 8270D	2,4-Dinitrophenol: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Soil / 9-4-2014 / TP-213 (0-3')	14H1178-01	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-4-2014 / TP-216 (0-6), TP-218 (0-11), TP-218 (13-17)	14H1179-03, -04, -05	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-4-2014 / TP-216 (0-6), TP-218 (13-17)	14H1179-03, -04,	SW-846 8100 Modified	o-Terphenyl: The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interference.
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11), TP-218 (13-17)	14H1179-02RE1, -04RE1, -05	SW-846 8260C	Naphthalene: Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Soil / 9-4-2014 / TP-214 (0-12), TP-214 (13-21), TP-216 (0-6), TP-218 (0-11)	14H1179-01, -02, -03, -04	SW-846 8260C	1,4-Dioxane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 9-4-2014 / TP-214 (0-12), TP-214 (13-21), TP-216 (0-6), TP-218 (0-11)	14H1179-01, -02, -03, -04	SW-846 8260C	1,2,3-Trichlorobenzene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-4-2014 / TP-214 (0-12), TP-214 (13-21), TP-216 (0-6), TP-218 (0-11)	14H1179-01, -02, -03, -04	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -02RE1, -03, -04, -04RE1, -05	SW-846 8260C	Chloromethane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -02RE1, -03, -04, -04RE1, -05	SW-846 8260C	Methylene Chloride: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -02RE1, -03, -04, -04RE1, -05	SW-846 8260C	Naphthalene: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-4-2014 / TP-214 (0-12), TP-214 (13-21), TP-216 (0-6), TP-218 (0-11)	14H1179-01, -02, -03, -04	SW-846 8260C	Trichlorofluoromethane (Freon 11): Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -02RE1, -03, -04, -04RE1, -05	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -02RE1, -03, -04, -04RE1, -05	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced prevision and accuracy may be associated with reported result.
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,2,3-Trichlorobenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,2,4-Trichlorobenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,2,4-Trimethylbenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,2-Dibromo-3-chloropropane (DBC): Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,2-Dichlorobenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,3-Dichlorobenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,4-Dichlorobenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	1,4-Dichlorobenzene-d4: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	Hexachlorobutadiene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	Naphthalene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	n-Butylbenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	p-Isopropyltoluene (p-Cymene): Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	sec-Butylbenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / TP-214 (13-21), TP-218 (0-11)	14H1179-02, -02RE1, -04, -04RE1	SW-846 8260C	tert-Butylbenzene: Internal standard area <50% of associated calibration standard internal standard area
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	2,4-Dinitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	2,4-Dinitrotoluene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	3,3-Dichlorobenzidine: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	4-Nitrophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Aniline: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Benzo(g,h,i)perylene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Bis(2-Ethylhexyl)phthalate: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Dibenz(a,h)anthracene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Di-n-butylphthalate: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Indeno(1,2,3-cd)pyrene: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 9-4-2014 / All Samples	14H1179-01, -02, -03, -04, -05	SW-846 8270D	Pentachlorophenol: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Soil / 9-18-2014 / TP-201 (6-13), TP-203 (6-9), TP-203 (15.5), TP-204 (3-6), TP-205 (3-6), TP-205 (8-9), TP-201 (0-3), TP-201 (3-6), TP-202 (0-3), TP-202 (3-6), TP-203 (0-3), TP-203 (3-6)	14I0659-03, -05, -06, -07, -08, -11, -12, -18, -19, -20, -21, -22, -23	MADEP-EPH-04-1.1	Sample received after recommended holding time was exceeded.
Soil / 9-18-2014 / TP-203 (6-9), TP-202 (0-3)	14I0659-05, -20	SW-846 8082A	Aroclor-1260: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 9-18-2014 / TP-203 (6-9), TP-202 (0-3)	14I0659-05, -20	SW-846 8082A	Aroclor-1260 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 9-18-2014 / HD-22 (9-12), HD-22 (17-19), TP-201 (6-13), TP-204 (19-20), TP-205 (3-6), TP-205 (8-9), HD-22 (0-3), HD-22 (3-3.5), HD-22 (7.5-14), HD-22 (19-21), TP-201 (0-3), TP-201 (3-6), TP-203 (3-6)	14I0659-01, -02, -03, -10, -11, -12, -14, -15, -16, -17, -18, -19, -23	SW-846 8082A	A five times dilution was performed as part of the standard analytical procedure.
Soil / 9-18-2014 / TP-204 (3-6), TP-202 (3-6)	14I0659-08, -21	SW-846 8082A	Decachlorobiphenyl: The surrogate recovery for this sample is not available due to the sample dilution below the surrogate reporting limit required from the high analyte concentration and/or matrix interferences.
Soil / 9-18-2014 / TP-204 (3-6), TP-202 (3-6)	14I0659-08, -21	SW-846 8082A	Decachlorobiphenyl [2C]: The surrogate recovery for this sample is not available due to the sample dilution below the surrogate reporting limit required from the high analyte concentration and/or matrix interferences.
Soil / 9-18-2014 / TP-204 (3-6), TP-202 (3-6)	14I0659-08, -21	SW-846 8082A	Tertrachloro-m-xylene: The surrogate recovery for this sample is not available due to the sample dilution below the surrogate reporting limit required from the high analyte concentration and/or matrix interferences.
Soil / 9-18-2014 / TP-204 (3-6), TP-202 (3-6)	14I0659-08, -21	SW-846 8082A	Tertrachloro-m-xylene [2C]: The surrogate recovery for this sample is not available due to the sample dilution below the surrogate reporting limit required from the high analyte concentration and/or matrix interferences.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 6020A	Beryllium: Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Vinyl Chloride: Laboratory fortified blank/laboratory control sample recovery ad duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Bromomethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value of this compound.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Chloromethane: Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	1,4-Dioxane: Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	1,4-Dioxane: Response factor is less than method specified minimum accepted value. Reduced precision and accuracy may be associated with reported result.
Water / 10-22-2014 / All Samples	14I1172-01, -02, -03	SW-846 8260C	Tetrahydrofuran: Response factor is less than method specified minimum acceptable value. Reduced prevision and accuracy may be associated with reported result.
Soil / 9-8-2015 / 37-1-7	15I0178-01	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 12-12-2014 / TP-315 (0-3ft), TP-314 (3-6ft), TP-314 (6-15ft), TP-314 (15-	14L0290-01, -03, -04, -05, -08	SW-846 8082A	Aroclor-1260: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Table C-5.5
QA/QC Issues for Contaminants of Concern; CAM Analyte List Issues for Analytical Method

Media / Date / Sample	Laboratory Report Identifier	Analytical Method	Issue
Soil / 12-12-2014 / TP-315 (0-3ft), TP-314 (3-6ft), TP-314 (6-15ft), TP-314 (15-16.5ft), TP-313 (6-13ft)	14L0290-01, -03, -04, -05, -08	SW-846 8082A	Aroclor-1260 [2C]: Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
Soil / 12-12-2014 / TP-312 (3-5ft)	14L0290-10	SW-846 8082A	Aroclor-1260: Matrix Spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
Soil / 12-12-2014 / TP-312 (3-5ft)	14L0290-10	SW-846 8082A	Aroclor-1260 [2C]: Matrix Spike duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result for this compound in this sample.
Soil / 12-12-2014 / TP-318 (0-3ft)	14L0404-29	SW-846 6010C	Lead: Matrix spike recovery is outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogenous sample aliquots cannot be eliminated.
Soil / 12-12-2014 / TP-306 (3-6ft)	14L0404-08	SW-846 6010C	Lead: Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.
Soil / 1-10-2012 / TP-23 3-E	360-38432-4	SW-846 8260C	Dilution required prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.
Soil / 1-10/2012 / TP-21 0-3, TP-21 3-E	360-38432-1, -2	SW-846 8270D	Dilution required prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.
Soil / 1-10-2012 / TP-23 3-E	360-38432-4	SW-846 8082A	Tetrachloro-m-xylene: Failed the surrogate recovery criteria data high. No target analytes were detected in this sample. Results would be biased high.
Soil / 1-10-2012 / TP-21 0-3, TP-21 3-E, TP-23 0-3	360-38432-1, -2, -3	MADEP-EPH-04-1.1	The closing continuing calibration verification for the samples was recovered outside of method limits high for: Benzo[a]fluoranthene, chrysene, Benzo[k]fluoranthene, and n-Hexatriacontanepyrene and low for Benzo[g,h,i]perylene. Per method, instrument maintenance was performed and the CCV was re-injected and passed criteria for the failing compounds
Soil / 1-10-2012 / TP-23 3-E	360-38432-4	MADEP-EPH-04-1.1	n-Hexatriacontane: Failed the criteria low for the closing CCV associated with the sample.
Soil / 1-10-2012 / TP-23 3-E	360-38432-4	MADEP-EPH-04-1.1	Dilution required prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly. Consequently, the surrogates 1-Chlorooctadecane and o-Terphenyl were diluted outside of control limits.

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14L0289
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14L0289-01 thru 14L0289-07

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Position: Manager, Laboratory Reporting

Printed Name: Johanna K. Harrington

Date: 10/03/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14L0290
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14L0290-01 thru 14L0290-10

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Director of Operations

Printed Name: Daren J. Damboragian Date: 10/03/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14L0404
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14L0404-01 thru 14L0404-32

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Position: Manager, Laboratory Reporting

Printed Name: Johanna K. Harrington

Date: 10/03/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14L0410
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14L0410-01 thru 14L0410-05

Matrices: Soil Water

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A ( )	6020 Metals CAM III D (X)	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Director of Operations

Printed Name: Daren J. Damboragian Date: 12/12/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 14H1086
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

14H1086-01 thru 14H1086-11

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB (X)	MassDEP VPH CAM IV A (X)	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A (X)	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☑ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Director of Operations

Printed Name: Daren J. Damboragian Date: 12/12/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 16A0734
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

16A0734-01 thru 16A0734-06

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B (X)	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Director of Operations

Printed Name: Daren J. Damboragian Date: 06/28/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 15I0044
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

15I0044-01 thru 15I0044-09

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Director of Operations

Printed Name: Daren J. Damboragian Date: 06/26/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 15I0169
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

15I0169-01 thru 15I0169-05

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Tod Kopyscinski Position: Laboratory Director

Printed Name: Tod E. Kopyscinski Date: 06/26/17

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Con-Test Analytical Laboratory	Project #: 15I0178
Project Location: Randolph, MA	RTN:

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

15I0178-01 thru 15I0178-06

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A ( )	7470/7471 Hg CAM IIIB ( )	MassDEP VPH CAM IV A ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP EPH CAM IV A ( )	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )	

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

A response to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Position: Manager, Laboratory Reporting

Printed Name: Johanna K. Harrington

Date: 06/26/17

APPENDIX D

Best Management Practices for Non-Commercial Gardening at Disposal Sites

Best Management Practices for Non-commercial Gardening at Disposal Sites

This property is part of a disposal site that has been assessed and determined to meet the requirements of a Permanent Solution with Conditions under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, where the Conditions include the recommendation of Best Management Practices ("BMPs") for gardening to reduce the potential risks from exposure to contaminated soil that remains on the site.

While the property has been determined to be safe for unrestricted use, including residential use, there are residual levels of contaminants remaining in the soil. Gardeners should consider implementing BMPs to further reduce potential exposure to material in the soil, regardless of the contaminant levels remaining. Implementing BMPs such as those suggested below will allow safer gardening in a wider range of site conditions. Not every BMP is necessary for every single site, but a combination of BMPs appropriate for your particular site will help reduce the potential for additional exposure.

Construct Physical Controls and Improve Soil Conditions

Actions to minimize contact (covering the soil) and reduce contaminant levels (such as amending the soil) will further reduce potential risks. Many good gardening practices, like adding compost and soil amendments, improve the soil while reducing the amount of contaminants and exposure to them. Recommendations include:

- Build your garden away from areas known or suspected to be contaminated. In addition to areas where residual contamination may be present, as identified by the disposal site assessment, other sources of contamination can include painted structures (particularly older buildings that may have been painted with lead paint), roads and rail lines.
- Build a hedge or fence to reduce windblown contamination from mobile sources and busy streets.
- Cover existing soil and walkways with mulch, landscape fabric, stones, or bricks.
- Use mulch in your garden beds to reduce dust and soil splash back, reduce weed establishment, regulate soil temperature and moisture, and add organic matter.
- Use soil amendments (such as lime and compost) to maintain neutral pH and add organic matter to improve soil structure.
    - Not all amendments are the same; be sure to choose the right amendments for your soil - amendments that improve conditions at one garden may not work well in others.
    - Keep in mind that each amendment type will have different application amounts and techniques (e.g., rototilling), and may need to be maintained and reapplied (e.g., annually).

  - Be sure to work with your local or state regulatory agency, and ask if your municipality provides free compost or mulch. Obtain compost only from a reputable source that can provide information regarding the quality and type of feedstock used to generate the compost.
- Add topsoil or clean fill from a reputable source that can provide information regarding the quality of the topsoil or fill to ensure the soil is safe for handling by children or gardeners of all ages and for food production.
- Build raised beds or container gardens.
  - Raised beds can be made by simply mounding soil into windrows or by building containers.
  - Raised beds help improve water drainage in heavy clay soils or low-lying areas. They also create accessible gardening locations for many users and allow for more precise soil management.
  - Foot traffic should not be necessary in the bed, so the soil does not become compacted and soil preparation in the coming years is minimized.
  - Place a water permeable fabric cover or geotextile as the bottom layer of your raised bed to further reduce exposure to soils of concern.
  - Sided beds can be made from wood, synthetic wood, stone, concrete block, brick or naturally rot-resistant woods such as cedar and redwood. Avoid using chemical-treated lumber for the raised bed because chemicals used in the treated wood could make their way into the soils and plants.

Minimize Ongoing Contact with or Ingestion of Soil

Actions to further reduce contact with soil during and after gardening activities can also minimize potential risks from any contaminants remaining in the soil.

- Do not use plants grown in contaminated soil for compost.
- Work in the garden when soil is moist or damp to minimize creation of dust.
- Avoid “double-digging” to decrease likelihood of moving deep soils to the surface.
- Wear gloves, long sleeves and pants while gardening to prevent skin exposure;
- Remove gardening shoes and garments before entering the home, and wash gardening clothes separately from other clothing.
- Wash hands after gardening.
- Wash all vegetables thoroughly.

For More Information

These recommended BMPs are consistent with federal, state and local guidance on urban gardening in general. MassDEP has additional information available online at: http://www.Mass.Gov/eea/agencies/massdep/cleanup/regulations/gardening-best-management-practices-at-disposal-sites.html

APPENDIX E

Public Notification Letters

Goldman
Environmental
Consultants, Inc.

60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

December 14, 2017

Mr. David C. Murphy, Town Manager
Randolph Town Hall, Town Managers Office
41 South Main Street
Randolph, MA 02368

RE: Permanent Solution
Lots 37 and 42, Pacella Park Drive, Randolph, MA
MADEP RTN 4-25906, RTN 4- 4-3023897

Transmitted via Certified Mail, Return Receipt Requested

To Whom It May Concern:

On behalf of Great Pond Residential LLC, the new owners of Lots 37 and 42, Pacella Park Drive, in Randolph, Massachusetts, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(f), of the availability of the complete report containing the Permanent Solution Statements and instructions on how they may obtain a copy of the Statements from Great Pond Residential LLC. The Permanent Solution was recently or will be submitted to the Massachusetts Department of Environmental Protection. A copy of the document is available from Great Pond Residential LLC, 5 Pacella Park Drive, Randolph, MA 02368.

Included with this letter is a copy of the Site Plan, showing the disposal site boundaries for RTN 4-25906 and RTN 4- 4-3023897. The area subject to this Permanent Solution is depicted on the Site Plan as enclosed in red. Should you have any questions regarding this matter, please do not hesitate to contact Brian T. Butler of GEC at (781) 356-9140 extension 113.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Brian T. Butler, LSP
V.P., Operations

cc: MassDEP Southeast Region
Andrew Dolben, Great Pond Residential LLC, c/o The Dolben Company, Inc.

Attachments: Figure 1 - Site Plan showing Location of Disposal Site

Goldman
Environmental
Consultants, Inc.

60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

December 14, 2017

Mr. John P. McVeigh, Dir. Public Health
Randolph Town Hall, Board of Health
41 South Main Street
Randolph, MA 02368

Re: Permanent Solution
Lots 37 and 42, Pacella Park Drive, Randolph, MA
MADEP RTN 4-25906, RTN 4- 4-3023897

Dear Mr. McVeigh,

On behalf of Great Pond Residential LLC, the new owners of Lots 37 and 42, Pacella Park Drive, in Randolph, Massachusetts, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(f), of the availability of the complete report containing the Permanent Solution Statements and instructions on how they may obtain a copy of the Statements from Great Pond Residential LLC.

The Permanent Solution was recently or will be submitted to the Massachusetts Department of Environmental Protection. A copy of the document is available from Great Pond Residential LLC, 5 Pacella Park Drive, Randolph, MA 02368.

Included with this letter is a copy of the Site Plan, showing the disposal site boundaries for RTN 4-25906 and RTN 4- 4-3023897. The area subject to this Permanent Solution is depicted on the Site Plan as enclosed in red. Should you have any questions regarding this matter, please do not hesitate to contact Brian T. Butler of GEC at (781) 356-9140 extension 113.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Brian T. Butler, LSP
V.P., Operations

cc: MassDEP Southeast Region
Andrew Dolben, Great Pond Residential LLC, c/o The Dolben Company, Inc.

Attachments: Figure 1 - Site Plan showing Location of Disposal Site

Goldman
Environmental
Consultants, Inc.

60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

December 14, 2017

Ms. Janet Hartke-Bowser, Conservation Agent
Randolph Town Hall
41 South Main Street
Randolph, MA 02368

Re: Permanent Solution
Lots 37 and 42, Pacella Park Drive, Randolph, MA
MADEP RTN 4-25906, RTN 4- 4-3023897

Dear Ms. Hartke-Bowser,

On behalf of Great Pond Residential LLC, the new owners of Lots 37 and 42, Pacella Park Drive, in Randolph, Massachusetts, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(f), of the availability of the complete report containing the Permanent Solution Statements and instructions on how they may obtain a copy of the Statements from Great Pond Residential LLC. As required by the Wetland Order of Condition #47g, the Town of Randolph Conservation Commission was provided a copy of the Permanent Solution Statements for Lots 37 and 42, 5 Pacella Park Drive, Randolph, Massachusetts, MassDEP RTN 4-3023897 and RTN 4-25464.

The Permanent Solution was recently or will be submitted to the Massachusetts Department of Environmental Protection. A copy of the document is available from Great Pond Residential LLC, 5 Pacella Park Drive, Randolph, MA 02368.

Included with this letter is a copy of the Site Plan, showing the disposal site boundaries for RTN 4-25906 and RTN 4- 4-3023897. The area subject to this Permanent Solution is depicted on the Site Plan as enclosed in red. Should you have any questions regarding this matter, please do not hesitate to contact Brian T. Butler of GEC at (781) 356-9140 extension 113.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Brian T. Butler, LSP
V.P., Operations

cc: MassDEP Southeast Region
Andrew Dolben, Great Pond Residential LLC, c/o The Dolben Company, Inc.

Attachments: Figure 1 - Site Plan showing Location of Disposal Site

APPENDIX F

Agent Authorization Letter

DOLBEN

July 20, 2015

Massachusetts Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

RE: Agent Letter for
Great Pond Residential LLC
Andrew K. Dolben, Manager
150 Presidential Way, Suite 220
Woburn, Massachusetts 01801

Regarding: Lots 37 and 42, Pacella Park Drive
Randolph, Massachusetts
MassDEP RTN 4-3023897 and RTN 4-25464

To Whom It May Concern:

I, Andrew K. Dolben, Manager of the Great Pond Residential LLC, with an interest in the properties at the above-referenced locations and with existing Release Tracking Numbers above, hereby authorize Goldman Environmental Consultants, Inc. of Braintree, Massachusetts, and Licensed Site Professional, Brian T. Butler, authority to act as my agent for all transactions associated with response actions under M.G.L. c. 21e and the Massachusetts Contingency Plan (MCP) [310 CMR 40.10000] to be conducted at the above-referenced property. Such transactions may include the following: signing and submittal of MCP documents, including a Phase I Report, Tier Classification Submittal, Comprehensive Response Action reports, Remedial Abatement Measure (RAM) Plans, RAM Status Reports, RAM Completion Reports, Permanent Solution Statements, Bureau of Waste Site Clean-up (BWSC) forms and other similar paperwork.

Please feel free to contact me if you have any questions. I can be reached at (781) 404-4200.

Sincerely,

Andrew K. Dolben, Manager
Great Pond Residential LLC
c/o The Dolben Company, Inc.
150 Presidential Way, Suite 220
Woburn, Massachusetts 01801