



## LETTER OF TRANSMITTAL

<b>TO: Mr. Patrick Bowe</b> Director, Remediation Division Bureau of Water Protection and Land Reuse State of Connecticut Department of Energy and Environmental Protection 79 Elm Street Hartford, CT 06106	<b>Date:</b> March 8, 2012  <b>Project No.:</b> 6107120004.095  <b>SUBJECT:</b> Revised Property-Specific Remedial Action Report Newhall Street Neighborhood 474 Newhall Street, Block K Hamden, Connecticut 06517
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WE TRANSMIT TO YOU:       HEREWITH       UNDER SEPARATE COVER

**SUBJECT:**

- DRAWINGS
- SPECIFICATIONS
- CALCULATIONS
- REPORT
- COST ESTIMATE
- AS NOTED

**ACTION:**

- FOR YOUR RECORDS
- FOR YOUR COMMENT OR APPROVAL
- RETURNED FOR CORRECTION: RESUBMIT
- APPROVED AS NOTED
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pages (including transmittal sheet)

COPIES	DATE	DESCRIPTION
1	March 2, 2012	Revised Property-Specific Remedial Action Report – 474 Newhall Street

**REMARKS:**

Enclosed for your records please find the Revised Property-Specific Remedial Action Report for the property noted above.

**CC:** Denise Burns – 474 Newhall Street, Hamden, CT 06517  
 Jay Gear – Olin  
 Ray Frigon – DEEP  
 Richard Pearce – Newhall Street Neighborhood Community Liaison

By: *J. Rodrick Pendleton*  
 Rod Pendleton  
 Principal Scientist

**PROPERTY-SPECIFIC REMEDIAL ACTION REPORT  
474 NEWHALL STREET**

**NON-PUBLIC PROPERTIES  
NEWHALL STREET NEIGHBORHOOD  
HAMDEN, CONNECTICUT**

*Prepared for:*



**Olin Corporation  
3855 North Ocoee Street, Suite 200  
Cleveland, TN 37312**

*Prepared by:*



**AMEC Environment & Infrastructure, Inc.  
1090 Elm Street, Suite 201  
Rocky Hill, Connecticut 06067**

**March 8, 2012**

**AMEC Project Number: 6107120004.095**

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**March 8, 2012**

**AMEC Project Number: 6107120004.095**

A handwritten signature in black ink that reads "Nelson Walter".

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Nelson Walter, P.E.  
Project Manager

A handwritten signature in black ink that reads "J. Rod Pendleton".


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Rod Pendleton, P.G  
Principal Scientist

## DOCUMENT CERTIFICATION

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, that the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information is punishable as a criminal offense under §53a-157b of the Connecticut General Statutes and any other applicable law.

David M. Share, Director, Environmental Remediation

  
\_\_\_\_\_  
Chief Executive Officer (or duly authorized representative)  
Olin Corporation

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Nelson Walter, Project Manager



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AMEC Environment & Infrastructure, Inc.

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Figure 2-1 Post-Construction Conditions

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Table 2-1 Excavation Confirmation XRF Sampling Results

**ATTACHMENTS**

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A Photographs

## **ACRONYMS AND ABBREVIATION**

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AMEC	AMEC Environment & Infrastructure, Inc.
bgs	below ground surface
DEEP	Connecticut Department of Energy and Environmental Protection
MACTEC	MACTEC Engineering and Consulting, Inc.
NPP	non-public properties
Olin	Olin Corporation
RAP	Remedial Action Plan
RAR	Remedial Action Report
RSP	Remedy Selection Plan
XRF	X-ray fluorescence

## **1.0 INTRODUCTION**

This revised Property-Specific Remedial Action Report (RAR) was prepared by AMEC Environment & Infrastructure, Inc. (AMEC) on behalf of Olin Corporation (Olin) for the property located at 474 Newhall Street in Hamden, Connecticut. This Property-Specific RAR was prepared based on information obtained during remediation activities conducted at the property during the 2011 construction season. This document provides information about the remediation activities completed for the property, which are required by Consent Order SRD-128 entered into by Olin, the Town of Hamden, the Regional Water Authority, the State Board of Education, and the State of Connecticut Department of Energy and Environmental Protection (DEEP). The Consent Order requires Olin to excavate and remove fill material up to 4 feet below ground surface (bgs) from approximately 230 residential properties within the Consent Order boundary.

Section 1 of this report provides a summary of site history and a general description of the remedy process for the Newhall Street Neighborhood. Section 2 of this report describes the construction activities conducted at 474 Newhall Street.

### **1.1 Regulatory Status**

In April 2003, the DEEP issued a Consent Order to Olin, the Town of Hamden, South Central Connecticut Regional Water Authority, and the State Board of Education (DEEP, 2003). The Consent Order requires Olin to investigate and remediate the Non-Public Properties (NPP) within the Consent Order boundary of the Newhall Street Neighborhood.

### **1.2 Description of Remedy Process**

In October 2007, a Final Remedy Selection Plan (RSP) was approved and issued by the Commissioner of the DEEP (DEEP, 2007). The remedy for the NPP within the Consent Order boundary is summarized below:

- Excavation of fill within the top 4 feet;
- Disposition of excavated material at authorized off-site facilities;
- Backfilling of excavated areas with clean soil; and
- Restoration of existing features including landscaping, patios, fencing, driveways, etc. that are disturbed during construction activities.

The Final Design - Generic Remedial Action Plan (RAP) (MACTEC, 2008), was approved by the DEEP and serves as the basis for remedial action activities within the NPP. The Final Design - Generic RAP details remedial construction activities including excavation of fill to a depth of up to four feet, backfilling excavations, disposition of fill and debris, and restoration of disturbed areas. Detailed plans and specifications regarding the remediation are contained in the Generic RAP and other project plans which have been approved by the DEEP. The Final Design - Generic



RAP and other plans are available at the Town of Hamden Miller Public Library located at 290 Dixwell Avenue, and on the DEEP website at: <http://www.newhallinfo.org>.

Prior to implementing the approved remedial solution, a Property-Specific RAP was prepared for each property owner and submitted to the DEEP for approval. The purpose of the Property-Specific RAP was to provide the homeowner with information regarding the planned construction activities, temporary relocation requirements (if necessary), access provisions, an estimated time table to complete the planned work, and a description of plans to restore the property to existing conditions.

## 2.0 PROPERTY-SPECIFIC CONSTRUCTION ACTIVITIES

During the 2011 construction season, Olin completed the excavation, backfill, and restoration of the property in accordance with the Final Design - Generic RAP and the Property-Specific RAP. Figure 2-1 shows the areas where excavation occurred on the property and the locations of excavation confirmation samples. Excavation confirmation samples were collected in accordance with Section 3.2.3 - Confirmatory Sampling of the Final Design - Generic RAP, including adherence to the sampling frequency requirements. X-ray fluorescence (XRF) excavation confirmation sampling results are presented in Table 2-1.

As indicated in Table 2-1, most confirmation sampling results indicate total lead concentrations less than the criteria of 400 milligrams per kilogram (mg/kg) approved by DEEP in the Final Design - Generic RAP. Several samples collected from the perimeter of the excavated area indicated total lead concentrations that exceeded 400 mg/kg. Additional soil could not be removed from these locations around the perimeter of the house, because continued excavation could jeopardize the integrity of the structure.

The following is a description of changes from the Property-Specific RAP that were necessitated because of field conditions and/or details regarding the marker barrier installed following excavation activities:

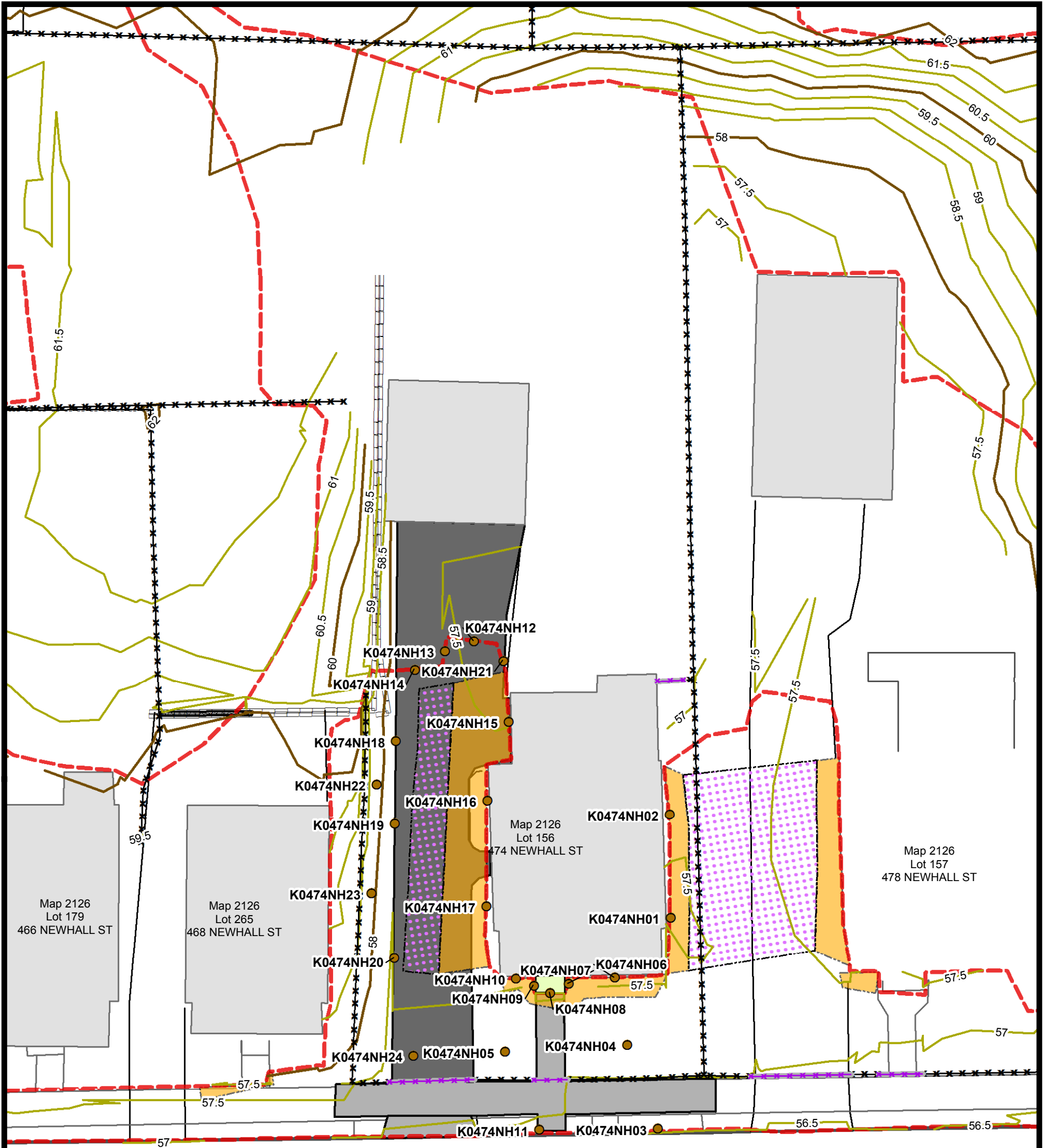
- In some locations, fill material was encountered at greater than 4 feet in depth below ground surface (bgs). This fill material was left in place, covered by an orange geotextile fabric, and backfilled with clean soil in accordance with the Final Design - Generic RAP. Figure 2-1 shows the approximate area of geotextile fabric identifying the presence of fill at a depth greater than 4 feet bgs.
- In some locations, it was necessary to leave fill material in place at depths less than 4 feet bgs in order to avoid jeopardizing the integrity of a structure. This fill material was left in place, covered by a marker barrier (an orange geotextile fabric and/or shotcrete), and backfilled with clean soil in accordance with the Final Design - Generic RAP. Figure 2-1 shows the approximate area of geotextile fabric/shotcrete identifying the presence of fill at a depth less than 4 feet bgs.

Photographs of construction activities and the restored property are presented in Attachment A.

### **3.0 REFERENCES**

- DEEP, 2003. Order No. SRD-128, State Of Connecticut vs. Town Of Hamden, South Central Connecticut Regional Water Authority, State Board Of Education, and Olin Corporation. State of Connecticut Department of Environmental Protection, April 16, 2003.
- DEEP, 2007. Remedy Selection Plan, Newhall Street, Neighborhood Remediation Project. State of Connecticut Department of Environmental Protection, October 2007
- MACTEC, 2008. Final Design - Generic Remedial Action Plan, Non-Public Properties, Newhall Street Neighborhood, Hamden, Connecticut. MACTEC Engineering and Consulting, Inc., August 19, 2008.

## FIGURES

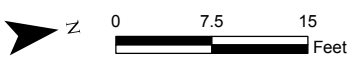


**Newhall Street**

**Legend**

- Approximate Extent of Marker Barrier Covering Fill < 4 ft bgs Remaining on Property
- Approximate Extent of Orange Marker Barrier Covering Fill > 4 ft bgs Remaining on Property
- Limits of Excavation
- Final Elevation Contour (2-ft interval)
- Final Elevation Contour (0.5-ft interval)
- Excavation Confirmation Sample
- New Fence
- New Fence Gate
- New Asphalt Driveway/Sidewalk
- New Concrete Driveway/Sidewalk
- Stairs

Note: All grass areas disturbed by excavation were restored with sod and/or seed/mulch.



Prepared/Date: CHL 11/07/11  
Checked/Date: DRP 11/07/11

## TABLES

**TABLE 2-1  
EXCAVATION CONFIRMATION XRF SAMPLING RESULTS**

**474 NEWHALL STREET  
NEWHALL STREET NEIGHBORHOOD  
HAMDEN, CONNECTICUT**

Location ID	Location Type	Field Sample ID	Sample Date	Top Depth (ft,bgs)	Bottom Depth (ft,bgs)	Parameter	Result	Final Qualifier	Unit of Measure
K0474NH01EX	PES	K0474NH-SON0102EX	06-Jul-11	2	2	Lead	154		MG/KG
K0474NH02EX	PES	K0474NH-SON0202EX	06-Jul-11	2	2	Lead	117		MG/KG
K0474NH03EX	PES	K0474NH-SON0301EX	06-Jul-11	1	1	Lead	54		MG/KG
K0474NH04EX	PEB	K0474NH-SON0403EX	07-Jul-11	3	3	Lead	50	U	MG/KG
K0474NH05EX	PEB	K0474NH-SON0503EX	07-Jul-11	3	3	Lead	50	U	MG/KG
K0474NH06EX	PES	K0474NH-SON0602EX	07-Jul-11	2	2	Lead	612		MG/KG
K0474NH07EX	PES	K0474NH-SON0702EX	07-Jul-11	2	2	Lead	214		MG/KG
K0474NH08EX	PES	K0474NH-SON0802EX	07-Jul-11	2	2	Lead	105		MG/KG
K0474NH09EX	PES	K0474NH-SON0902EX	07-Jul-11	2	2	Lead	208		MG/KG
K0474NH10EX	PES	K0474NH-SON1002EX	07-Jul-11	2	2	Lead	149		MG/KG
K0474NH11EX	PES	K0474NH-SON1101EX	07-Jul-11	1	1	Lead	97		MG/KG
K0474NH12EX	PES	K0474NH-SON1202EX	08-Jul-11	2	2	Lead	63		MG/KG
K0474NH13EX	PES	K0474NH-SON1302EX	08-Jul-11	2	2	Lead	123		MG/KG
K0474NH14EX	PES	K0474NH-SON1402EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH15EX	PES	K0474NH-SON1502EX	08-Jul-11	2	2	Lead	206		MG/KG
K0474NH16EX	PES	K0474NH-SON1602EX	08-Jul-11	2	2	Lead	92		MG/KG
K0474NH17EX	PES	K0474NH-SON1702EX	08-Jul-11	2	2	Lead	172		MG/KG
K0474NH18EX	PES	K0474NH-SON1802EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH19EX	PES	K0474NH-SON1902EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH20EX	PES	K0474NH-SON2002EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH21EX	PES	K0474NH-SON2102EX	08-Jul-11	2	2	Lead	84		MG/KG
K0474NH22EX	PEB	K0474NH-SON2202EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH23EX	PEB	K0474NH-SON2302EX	08-Jul-11	2	2	Lead	50	U	MG/KG
K0474NH24EX	PEB	K0474NH-SON2403EX	08-Jul-11	3	3	Lead	50	U	MG/KG

Notes: bgs - below ground surface

ft - feet

KG - kilograms

MG - milligrams

PEB - sample from bottom of excavation

PES - sample from perimeter of excavation

U - not detected at a concentration above the reporting limit

XRF - x-ray fluorescence

**ATTACHMENT A  
PHOTOGRAPHS**





**View looking Northeast at excavated side yard following placement of marker barrier**



**View looking West at excavated front of property**



**View looking West at excavated side yard following placement of marker barrier**



**View looking West at restored front of property**



**View looking West at restored driveway**



**View looking West at restored side yard**