



3855 North Ocoee Street, Suite 200  
Cleveland, TN 37312

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October 7, 2011

Mr. Patrick Bowe  
Director  
Remediation Division  
Bureau of Water Protection and Land Reuse  
Connecticut Department of Energy and Environmental Protection  
79 Elm Street  
Hartford, CT 06106

Re: Property-Specific Remedial Action Report  
Newhall Street Neighborhood  
27 Saint Mary Street, Block H  
Hamden, Connecticut 06517

Dear Mr. Bowe:

Enclosed please find the Property-Specific Remedial Action Report (RAR) prepared for the property located at 27 Saint Mary Street in Hamden, Connecticut. The Property-Specific RAR summarizes the remediation and restoration activities conducted at the property as required by Consent Order No. SRD-128. Remediation and restoration of this property are complete and were implemented in compliance with the Remedy Selection Plan, the Generic RAP, and the Property-Specific Remedial Action Plan (RAP) approved by the Connecticut Department of Energy and Environmental Protection (DEEP).

Section 2.0 of the enclosed report documents property-specific construction activities, as well as any adjustments to the Property-Specific RAP that were required due to the extent of fill encountered or other field conditions. Please note that any field adjustments made were pursuant to the approved Generic RAP and/or with DEEP oversight and approval. Olin hereby submits this Property-Specific RAR for DEEP approval. As noted below and as required by the Remedy Selection Plan, a copy of the enclosed report has also been provided to the property owner.

Please contact me at (423) 336-4540 if you have any questions regarding this matter.

Sincerely,  
OLIN CORPORATION

David M. Share  
Director, Environmental Remediation

Enclosure

cc: Mr. Vincent Pesce – 224 Putnam Avenue, Hamden, CT 06517 (w/enclosure)  
Robert Bell – DEEP (w/enclosure)  
Ray Frigon – DEEP (w/enclosure)  
Curt Richards – Olin (w/o enclosure)  
Carrie Hunt – Olin (w/o enclosure)  
Nelson Walter – AMEC (w/o enclosure)  
Richard Pearce – Newhall Street Neighborhood Community Liaison (w/enclosure)  
Robert Labulis – Town of Hamden Building Department (w/enclosure)

**PROPERTY-SPECIFIC REMEDIAL ACTION REPORT  
27 SAINT MARY 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.**  
511 Congress Street, Suite 200  
Portland, Maine 04101

**October 7, 2011**

**AMEC Project Number: 6107110004/75**

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**AMEC Project Number: 6107110004/75**

A handwritten signature in black ink, appearing to read "Nelson Walter".

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Nelson Walter, P.E.  
Project Manager

A handwritten signature in black ink, appearing to read "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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MACTEC Engineering and Consulting, Inc.

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Figure 2-1 Post-Construction Conditions

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Table 2-1 Excavation Confirmation XRF Sampling Results

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## 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 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 27 Saint Mary 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 27 Saint Mary 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 (CTDEP, 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 (CTDEP, 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 of fill material to a depth of 4 feet bgs, 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, all confirmation sampling results indicated total lead concentrations less than the criteria of 400 mg/kg approved by DEEP in the Final Design - Generic RAP.

The following is a description of changes from the Property-Specific RAP that were necessitated because of field conditions:

- All fill material within 4 feet of ground surface was removed in accordance with the Property-Specific RAP and the Final Design - Generic RAP, with the exception of an area on the northern side of the garage, and on the eastern end of the primary residence. The remaining fill material within 4 feet of the ground surface was covered with an orange geotextile marker barrier prior to backfilling with clean soil, in accordance with the Final Design - Generic RAP. The approximate limits of the orange geotextile marker barrier are presented on Figure 2-1.
- 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.

Photographs of construction activities and the restored property are presented in Attachment 1.

### **3.0 REFERENCES**

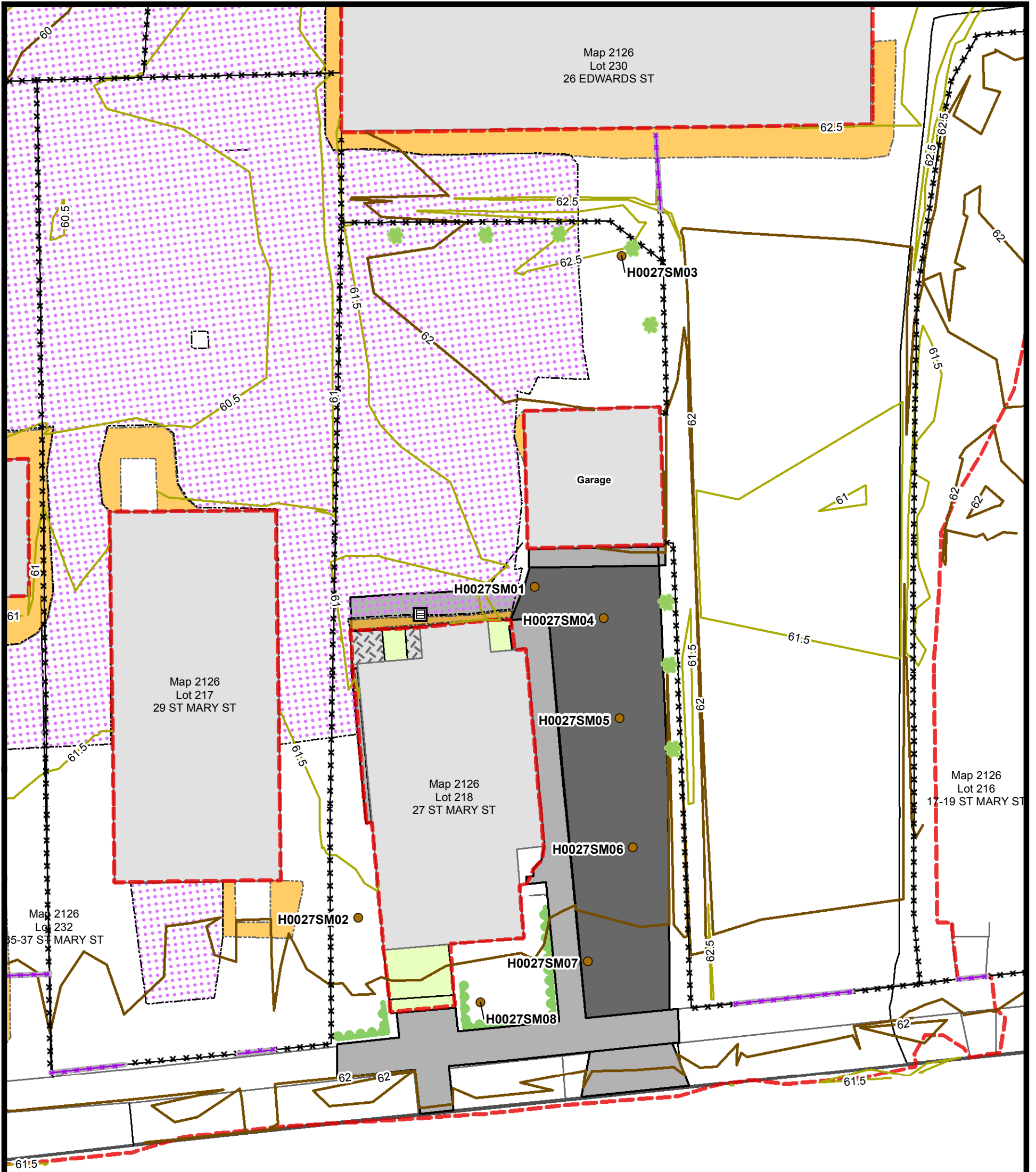
CTDEP, 2003. Order No. SRD-128, State Of Connecticut vs. Town Of Hamden, South Central Connecticut Regional Water Authority, State Board Of Education, and Olin Corporation. State of Connecticut Department of Environmental Protection, April 16, 2003.

CTDEP, 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.

MACTEC, 2010. Property-Specific Remedial Action Plan, 27 St. Mary Street, Non-Public Properties, Newhall Street Neighborhood, Hamden, Connecticut. MACTEC Engineering and Consulting, Inc., April 30, 2010.

## FIGURES

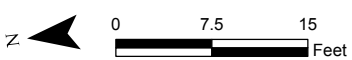


**Saint Mary Street**

**Legend**

- Approximate Extent of Orange 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
- Limits of Excavation
- New Tree
- New Shrub Hedge
- Stairs/Porch
- Concrete Pad
- New Fence
- New Fence Gate
- New Dry Well
- New Asphalt Driveway/Sidewalk
- New Concrete Driveway/Sidewalk

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



Prepared/Date: BRP 09/23/11  
Checked/Date: DRP 09/23/11

## **TABLES**

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

**27 SAINT MARY 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
H0027SM01EX	PEB	H0027SM-SON0103EX	13-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM02EX	PEB	H0027SM-SON0203EX	14-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM03EX	PEB	H0027SM-SON0303EX	07-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM04EX	PEB	H0027SM-SON0403EX	11-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM05EX	PEB	H0027SM-SON0503EX	11-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM06EX	PEB	H0027SM-SON0603EX	12-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM07EX	PEB	H0027SM-SON0703EX	12-Apr-11	3	3	Lead	50	U	MG/KG
H0027SM08EX	PEB	H0027SM-SON0803EX	12-Apr-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 1  
PHOTOGRAPHS**





**View looking northeast of extent of excavation at former driveway**



**View looking west at extent of excavation in backyard**



**View looking west at filter fabric at base of backyard excavation**



**View looking southwest at backfilled excavation**



**View looking east at restored driveway at 27 St. Mary Street**



**View looking southwest at restored back yard at 27 St. Mary Street**