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## U. S. EPA Superfund Program

### Proposed Plan for Interim Remedial Action

#### Operable Unit 2 (OU2)

Hidden Lane Landfill

Sterling, Virginia

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### EPA ANNOUNCES PROPOSED PLAN

April 2018

#### A. INTRODUCTION

The United States Environmental Protection Agency (EPA) is issuing this Proposed Remedial Action Plan (Proposed Plan) to present the Preferred Alternative for an interim remedial action for Operable Unit 2 (OU2) at the Hidden Lane Landfill Site in Sterling, Loudoun County, Virginia (Site) to address exposure of the public to site-related contaminants in groundwater in drinking water wells. This Proposed Plan presents the rationale for proposing the Preferred Alternative and includes a summary of alternatives evaluated to prevent human exposure to contaminants in groundwater. The restoration of contaminated groundwater will be addressed in a future Record of Decision (ROD) selecting the final remedial action for the Site.

#### Dates to Remember

**April 19, 2018 to  
June 18, 2018**  
Public Comment Period on  
EPA's Proposed Plan

**April 26, 2018,  
7 p.m. to 9 p.m.**  
Public Meeting  
Galilee United Methodist Church  
45425 Winding Road  
Sterling, VA 20165

EPA is the lead agency for Site activities, and the Virginia Department of Environmental Quality (VADEQ) is the support agency. EPA, in consultation with VADEQ, will select an interim remedial action for OU2 at the Site after reviewing and considering all information submitted during the 60-day public comment period held between April 19, 2018 and June 18, 2018. A Public Meeting will be held to explain this proposed action to the public at Galilee United Methodist Church, located at 45425 Winding Road Sterling, VA 20165 on April 26<sup>th</sup>.

EPA, in consultation with VADEQ, evaluated the following alternatives to address exposure of the public to contaminants in groundwater via drinking water wells located at the Site:

#### Drinking Water Well Contamination

Alternative 1: No Action

Alternative 2: Land Use Controls

Alternative 3: Continued Maintenance of Point-of-Entry Treatment Systems (POETS)  
with Land Use Controls

Alternative 4: Public Waterline with Land Use Controls.

Based on the available information, the Preferred Alternative proposed for public comment at this time is **Alternative 4 Public Waterline with Land Use Controls**.

The estimated costs for the Public Waterline with Land Use Controls alternative are:

Construction of Public Waterline - \$6,743,450

Land Use Controls – Administrative costs only

EPA, in consultation with VADEQ, may modify the Preferred Alternative or select another interim remedial action presented in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all alternatives presented in this Proposed Plan for interim remedial action. The public comment period will run from April 19, 2018 to June 18, 2018. After the close of the public comment period and consideration of any comments received, EPA will document selection of the interim remedial action in an interim ROD. The public's comments and EPA's responses will be documented in the Responsiveness Summary section of the interim ROD.

EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9617(a), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 C.F.R. § 300.430(f)(3).

This Proposed Plan highlights key information that can be found in greater detail in the Interim Action Feasibility Study and other documents contained in the Administrative Record file, which contains all the documents considered or relied upon in the selection of a Preferred Alternative for this interim remedial action. EPA and VADEQ encourage the public to review these documents to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted at the Site. The Administrative Record file for this action can be accessed at <https://go.usa.gov/xQD7r> or at the following locations:

Cascades Library  
21030 Whitfield Place  
Potomac Falls, VA 20165  
Hours: call 703-444-3228

EPA Administrative Records Room  
Attn: Administrative Records Coordinator  
1650 Arch Street  
Philadelphia, PA 19103

<http://library.loudoun.gov>

Phone: (215) 814-3157

Hours: Monday-Friday 8:30 am to 4:30 pm

By appointment only

## **B. SITE BACKGROUND**

### **Site Location and Description**

The Hidden Lane Landfill Site was a privately owned and operated disposal facility situated north of Virginia Route 7 between the communities of Broad Run Farms, to the west, and Countryside, to the east, in Sterling, Loudoun County, Virginia (Figure 1). The landfill is approximately 30 acres in size and is adjacent to the flood plain of the Potomac River. Starting in 1971, the facility accepted a variety of solid wastes including construction and demolition wastes. The landfill was closed in 1986 by order of the Commonwealth of Virginia. A two-foot clay cover was installed on top of the landfill when it was closed. The landfill is now covered by grass and young trees. The Site is currently not in use. The Site is not fenced and access is unrestricted except for a locked gate at the Site road entrance.

### **Previous Environmental Investigations and Actions**

EPA conducted a Preliminary Assessment of the landfill from 1988 to 1989. Trichloroethene (TCE) contamination was detected in two drinking water wells in the Broad Run Farms community, west of the landfill. No TCE was detected in the three landfill monitoring wells located downgradient of the landfill, landfill seeps, soils or surface water. Based on the information available at the time and the limited scientific understanding of bedrock aquifers, the TCE in drinking water wells was not attributed to the landfill at the Site. No further action under CERCLA was recommended.

Over the next 16 years following the Preliminary Assessment, TCE was found in five new wells installed in the Broad Run Farms community. In March 2005, 67 drinking water wells in the Broad Run Farms community were sampled for TCE by the Loudoun County Health Department. Following that effort, VADEQ placed 22 affected residences on Point-of-Entry Treatment Systems (POETS) to intercept the TCE before it entered the home plumbing. Three additional residences were provided POETS during the VADEQ period of system maintenance.

EPA reopened its evaluation of the Site in October 2005. A Site Assessment was completed in 2007 which resulted in the Site being proposed to EPA's National Priorities List of contaminated sites (NPL) on September 19, 2007. The Site was listed on the NPL

on March 19, 2008. Responsibility for the investigation and remediation of the Site, as well as maintenance of 25 residential POETS, was transferred from VADEQ to EPA because of the NPL listing in June 2008. During the course of the remedial investigation (RI), EPA installed additional POETS at residences where Site contaminants were found to pose a risk to human health. Currently, EPA maintains 36 residential POETS. RI activities conducted by an EPA contractor under the direction of EPA began in early 2009. The investigation included sampling and analysis of groundwater, surface water, and sediment, as well as landfill gases including methane associated with the landfill. An evaluation of the potential for the migration of site-related vapors into private homes was also conducted.

In 2016, EPA began work on a Feasibility Study (FS) at the Site to identify alternatives for a remedial action to address the drinking water well contamination and groundwater contamination. Due to uncertainties concerning the potential source of groundwater contamination and the need for further investigation, in the summer of 2017, EPA and VADEQ decided to address exposure of the public to contaminants in groundwater as a separate interim remedial action. An Interim Action FS to address this exposure route was finalized in September 2017. This Interim Action FS summarizes data collected by EPA during the ongoing RI, as well as data collected by VADEQ and Loudoun County during previous investigations and identifies alternatives for addressing unacceptable human health risks posed by exposure to site-related contaminants in groundwater.

### **C. SITE CHARACTERISTICS**

The results of the RI and associated risk assessments indicate the following:

- TCE and its potential breakdown products are the only contaminants of concern (COCs) at the Site. Potential TCE breakdown products are 1,1-Dichloroethene (1,1 DCE), cis-1,2-Dichloroethene (Cis 1,2 DCE), and Vinyl chloride (VC)
- Disposal of TCE within the landfill has resulted in a 207-acre dissolved TCE groundwater plume within the fractured bedrock Balls Bluff formation.
- The plume is approximately 2,500 feet long and 900 feet wide and extends to a depth of approximately 500 feet below ground surface. See Figure 2 for a depiction of the areal extent of the plume of TCE and contours identifying concentrations.
- The plume extends from the southern half of the landfill north/north west beneath the Broad Run Farms community to the Potomac River.
- No unacceptable risks were identified from exposure to soils, surface water, sediments or vapor intrusion.
- Methane gas generation is no longer a concern at the landfill.

#### **D. SCOPE AND ROLE OF RESPONSE ACTION**

This Proposed Plan for this OU2 interim remedial action addresses the exposure of the public to contaminants in groundwater via drinking water wells impacted by site-related groundwater contamination. A final remedial action for the remainder of the Site (OU1) will be proposed following completion of the RI/FS, which addresses all contaminated media at the Site.

#### **E. SUMMARY OF SITE RISKS**

TCE is present in drinking water wells at concentrations exceeding the federal Safe Drinking Water Act Maximum Contaminant Level (MCL) of 5 µg/L, promulgated pursuant to section 1412 of the Safe Drinking Water Act, 42 U.S.C. 300g-1, and codified in 40 C.F.R. section 141.61. MCLs are considered applicable requirements for drinking water wells and are required to be met at the tap prior to use. Current concentrations of TCE in residential wells range from non-detect to 300 µg/L.

EPA and VADEQ have identified TCE and its potential breakdown products (1,1-DCE, cis-1,2 DCE, and VC) as the primary COCs that pose the greatest potential unacceptable risk to human health at the Site.

It is EPA's current judgment that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

#### **F. REMEDIAL ACTION OBJECTIVES**

The Remedial Action Objective (RAO) for this interim remedial action is to:

- Prevent current or future exposure of the public to TCE and its breakdown products in groundwater via drinking water wells at concentrations exceeding MCLs.

EPA guidance states that “[a]n interim action is limited in scope and only addresses areas/media that also will be addressed by a final site/operable unit ROD.”<sup>1</sup> This RAO is designed to support a final remedial action which will comply with CERCLA requirements to cleanup contaminants in groundwater and restore the groundwater to beneficial use. Therefore, the RAO reflects the limited scope of an interim remedial

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<sup>1</sup> “A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents” (Office of Solid Waste and Emergency Response) (July 1999), at p. 8-2.

action. By preventing human exposure to contaminated groundwater, the interim remedial action will reduce Site risks by ensuring the public is not exposed or potentially exposed to contaminants in groundwater at concentrations exceeding MCLs prior to the cleanup of the groundwater.

## **G. SUMMARY OF REMEDIAL ALTERNATIVES**

The alternatives evaluated below were designed to meet the RAO as well as contribute to subsequent remedial actions. The Preferred Alternative is Alternative 4, Public Waterline with Land Use Controls.

<b>Alternative</b>	<b>Description</b>
1	No Action
2	Land Use Controls
3	Continued Maintenance of POETS with Land Use Controls
4	Public Waterline with Land Use Controls

### **Alternative 1: NO ACTION**

Consideration of this alternative is required by the NCP at 40 C.F.R. § 300.430(e)(6). Alternative 1 requires no additional remedial action to be taken at the Site. The No Action alternative serves as a basis against which each of the other proposed remedial alternatives can be compared. Under this alternative, the existing POETs would no longer be maintained by either EPA or VADEQ.

### **Alternative 2: LAND USE CONTROLS**

This action would eliminate exposure to contaminated groundwater through the use of land use controls such as local ordinances. These restrictions would prohibit the use of groundwater for potable use (drinking, bathing, or cooking) within the area of Site-related groundwater contamination, including a buffer zone. The buffer zone will address any potential future migration of contaminants into unaffected areas. For discussion purposes the buffer zone includes the area approximately 300 feet outside the 5 µg/L TCE footprint. Final boundary of the buffer zone will be determined based on additional residential well sampling during the design period.

**Alternative 3: CONTINUED MAINTANENCE OF POINT-OF-ENTRY TREATMENT SYSTEMS (POETS)**

This action would continue use of POETS to treat contaminated groundwater before it reaches human receptors. The POETS are currently in place at residences in the Broad Run Farms community at locations where TCE has exceeded the MCL of 5 µg/L and consist of two carbon units located in series (primary and back-up) that capture the TCE, and a UV light to remove any potential bacteria that may grow in the system. This alternative would commit EPA and VADEQ to the continued maintenance of these systems until the groundwater plume is restored to safe drinking water standards. This action would include quarterly sampling of drinking water wells and POETS, periodic replacement of carbon units, annual replacement of UV bulbs, pre-filter cartridge replacement as needed and non-routine repairs of treatment units. This alternative would also commit EPA and VADEQ to expand the use of POETS to other residences who may potentially become impacted at concentrations exceeding the MCL.

**Alternative 4: PUBLIC WATERLINE**

This action would prevent exposure to contaminated groundwater by providing an alternative clean water supply to properties using drinking water wells within the area of groundwater contamination. Under this alternative, properties with drinking water wells that are currently contaminated with TCE above the MCL would be connected to the existing Loudoun Water system. Additionally, residences that are considered likely to become impacted by TCE at concentrations exceeding the MCL based on their location within or adjacent to the aerial extent of the groundwater contamination plume will also be connected to the existing Loudoun Water system. Existing wells would either be abandoned or completely disconnected from the drinking water system. Disconnected wells could be used for non-potable purposes under certain conditions or used as monitoring wells to help further investigate groundwater conditions, as agreed to by EPA and VADEQ, in the future.

**H. EVALUATION OF ALTERNATIVES**

This section compares the remedial alternatives summarized above to each other using the nine criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii). In the remedial decision-making process, EPA describes the relative performance of each alternative against the evaluation criteria, and notes how each alternative compares to the other alternatives under consideration. A detailed analysis of alternatives can be found in the Interim Action F S, which is in the Administrative Record file for the Site.

These evaluation criteria relate directly to requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, for determining the overall feasibility and acceptability of a remedy. The nine criteria fall into three groups described as follows:

*Threshold criteria* must be satisfied for a remedy to be eligible for selection.

*Primary balancing criteria* are used to weigh major tradeoffs between remedies.

*Modifying criteria* are considered after public comment is received on the Proposed Plan.

<b>Evaluation Criteria for Superfund Remedial Alternatives</b>	
<i>Threshold Criteria</i>	<b>1. Overall Protection of Human Health and the Environment</b> determines whether an alternative can adequately protect human health and the environment by eliminating, reducing, or controlling exposures to hazardous substances, pollutants or contaminants to levels that do not pose an unacceptable risk.
	<b>2. Compliance with ARARs</b> evaluates whether an alternative meets Federal and more stringent State environmental laws or facility siting laws, or whether a waiver is justified.
<i>Primary Balancing Criteria</i>	<b>3. Long-term Effectiveness and Permanence</b> considers the ability of an alternative to maintain protection of human health and the environment over time.
	<b>4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment</b> evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
	<b>5. Short-term Effectiveness</b> considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
	<b>6. Implementability</b> considers the technical and administrative feasibility of implementing an alternative, including factors such as the relative availability of goods and services.
	<b>7. Cost</b> includes the estimated capital and annual operation and maintenance costs, as well as present worth cost of an alternative. Present worth cost is the total cost of an alternative over time in today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
<i>Modifying Criteria</i>	<b>8. State/ Support Agency Acceptance</b> considers whether the State agrees with EPA's analyses and recommendations, as described in the Interim Action Feasibility Study and Proposed Plan.
	<b>9. Community Acceptance</b> considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

## **Detailed Analysis of Proposed Remedial Alternatives**

### **1. Overall Protection of Human Health and the Environment**

Alternative 1 (No Action) does not include measures to prevent current and future receptors from using contaminated groundwater. This alternative assumes that the existing POETS maintained by EPA would not be maintained by either EPA or VADEQ in the future. If action is not taken, contaminated groundwater could potentially be drawn into drinking water wells and expose the resident to unacceptable levels of site-related contaminants. This alternative would not be protective of human health and the environment. The No Action alternative fails this threshold criterion and is therefore eliminated from further consideration under the remaining eight criteria.

Alternative 2 (Land Use Controls) would prohibit the use of contaminated groundwater for potable purposes (drinking, bathing, cooking). Land Use Controls would not prohibit the use of groundwater for non-potable use, such as irrigation. Because continued maintenance of the POETS would not be a part of this alternative, this alternative would not include a means to provide safe drinking water to those members of the public whose wells are impacted by site-related contaminants. This alternative alone does not provide impacted residents with alternative clean water and, thus, would not be protective of human health and the environment. The Land Use Controls alternative fails this threshold criterion and is therefore eliminated from further consideration under the remaining eight criteria. It is, however, retained as a component of Alternatives 3 and 4.

Alternative 3 (Continued Maintenance of POETS with Land Use Controls) would protect human health by preventing the use of contaminated groundwater for drinking water. The POETS would continue to prevent human consumption and use of impacted groundwater with TCE exceeding the MCL. Land use controls, as described in Alternative 2, would ensure that untreated groundwater at the site was not used for potable purposes. Alternative 3 would satisfy this threshold criterion. Figure 3 shows the location of existing POETS and the approximate outline of the land use controls.

Alternative 4 (Public Waterline with Land Use Controls) would protect human health by eliminating the need to use contaminated groundwater from drinking water wells in the impacted area as a drinking water source. In combination with extension of the public drinking water system, land use controls, as described in Alternative 2, would ensure that contaminated groundwater containing TCE at concentrations exceeding the MCL is not used for drinking, bathing or cooking. Alternative 4 would satisfy this threshold criterion. Figure 4 shows the layout of the proposed waterline and the approximate outline of the land use controls.

## **2. Compliance with ARARs**

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(B), require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law, which are collectively referred to as “ARARs,” unless such ARARs are waived under Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(C).

“Applicable” requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be applicable.

“Relevant and appropriate” requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

Section 121(d)(4)(A) of CERCLA provides that EPA may select an action that does not meet an ARAR if the selected action “is only part of a total remedial action that will attain such level or standard of control when completed.” The proposed action is an interim remedial action and will be part of a total remedial action to address contaminated groundwater at the Site. While the final remedial action will seek to restore the aquifer to beneficial use, this interim remedial action seeks to implement limited action to prevent human exposure to contaminated groundwater. The proposed interim remedial action will support the final remedial action. The final remedial action will be selected to address remaining unacceptable risks presented by Site.

Major ARARs include:

- Applicable Requirement - National Primary Drinking Water Standards: 40 C.F.R. §§ 141.50 and 141.61 establish health-based standards (i.e., Maximum Contaminant Level Goals (MCLGs) and MCLs) for public drinking water.
- Virginia Regulations Governing the Construction and Use of Wells: 12 VAC 5-590-840B contains requirements governing the location, design, installation, use of disinfection, modification, repair and abandonment of all wells and associated pumping equipment.
- Virginia Ambient Air Quality Standards - Particulate Matter: 9 VAC 5-30-60 establishes standards for particulate matter in ambient air.
- Virginia Regulations – New and Modified Stationary Sources – Visible and Fugitive Dust Emissions: 9 VAC 5-50-60 thru 120 establishes standards for particulate matter in ambient air.

Alternative 3 (Continued Maintenance of POETS with Land Use Controls) would decrease TCE concentrations in drinking water systems to meet the MCL. The POETS would be maintained until TCE concentrations in the drinking well water is below the MCL. Land use controls would further prevent contact with groundwater containing TCE at concentrations greater than MCLs. Alternative 3 would comply with the chemical-specific ARARs at the tap; however, achievement of chemical-specific ARARs in groundwater within the aquifer would be addressed in a future decision document that addresses the restoration of groundwater.

Alternative 4 (Public Waterline with Land Use Controls) would provide a permanent alternative source of drinking water that meets applicable ARARs, namely MCLs. Land use controls would further prevent contact with groundwater containing TCE at concentrations above MCLs. Wells would be abandoned in accordance with Virginia regulation 12 VAC 5-590-840B. Techniques would be utilized to control fugitive dust emissions generated during the course of construction in accordance with Virginia regulations 9VAC 5-30-60 and 5-50-60 thru 120. Achievement of chemical-specific ARARs in groundwater within the aquifer will be addressed in a future decision document that addresses the restoration of groundwater.

### **3. Long Term Effectiveness and Permanence**

Alternative 3 (Continued Maintenance of POETS with Land Use Controls) would be effective in protecting human health for as long as the systems are maintained. However, the POETS require continuous maintenance and oversight to ensure they are functioning correctly. Additionally, there may be times when individual POETS are not functioning

properly, which could lead to limited short-term exposure, and would require diligent maintenance and oversight for, as long as groundwater remains contaminated above MCLs. Therefore, Alternative 3 would be moderately effective in satisfying this criterion.

Alternative 4 (Public Waterline with Land Use Controls) would be effective in protecting human health. A public water supply is a long-term, permanent alternative water source. Additionally, land use controls would prevent use of site groundwater until ARARs are met in groundwater throughout the plume. Therefore, Alternative 4 effectively satisfies this criterion better than Alternative 3 because connection to a public water line will permanently provide water to the residences more effectively and with less long-term maintenance than Alternative 3.

#### **4. Reduction of Toxicity, Mobility, or Volume through Treatment**

Alternative 3 (Continued Maintenance of POETS with Land Use Controls) would treat contaminated groundwater from drinking water wells to meet MCLs, prior to its use as drinking water. Therefore, although Alternative 3 would not provide cleanup for the groundwater aquifer, it would provide some contaminant treatment.

Alternative 4 (Public Waterline with Land Use Controls) would not involve any treatment to remove TCE from contaminated groundwater. However, the public waterline with land use controls would eliminate the exposure pathway to residences.

Neither Alternative 3 or 4 would affect the toxicity, mobility, or volume of TCE within the groundwater aquifer. The treatment of TCE in groundwater will be addressed in the final remedial action for the Site.

#### **5. Short-Term Effectiveness**

For Alternative 3 (Continued Maintenance of POETS with Land Use Controls), minimal human health concerns are associated with maintenance of the POETS or implementation of land use controls. POETS are already in-place for wells identified as impacted by site contaminants to date; therefore, the RAO for protection of human health has already been met in the short term where POETS have been installed.

For Alternative 4 (Public Waterline with Land Use Controls), some short-term human health concerns may be associated with the installation and construction of water supply lines to provide public water. These concerns would be addressed through best management and safe work practices during construction. Extension of the public water

supply could be completed within 2 years. POETS would be maintained until the waterline is in place to ensure protectiveness in the short term. Alternative 4 poses more risk to workers than Alternative 3; however, construction necessary to connect residences to public water and well abandonment would be conducted in accordance with well-established worker protection procedures.

## **6. Implementability**

Alternative 3 (Continued Maintenance of POETS with Land Use Controls) is easily implementable. POETS are already installed and undergoing regular maintenance, and installation of additional POETS would be readily implementable.

Alternative 4 (Public Waterline with Land Use Controls) is implementable. Other properties in the area are already connected to public water. This alternative would require installation of approximately 4 miles of new water lines and connection of affected or potentially affected residences.

Implementation of Alternative 4 would require initial significant construction activities but would be completed relatively quickly (two years); implementation of Alternative 3 would not require construction but would require regular maintenance for as long as is required to remediate the groundwater (presumed to be 30 years for purposes of estimating cost) or indefinitely. On balance, both alternatives are equally implementable.

## **7. Cost**

Cost information for Alternatives 3 and 4 over a presumed 30-year period is presented below. Detailed cost estimates and associated assumptions are included in Tables 1 and 2, using a 7% discount rate. These preliminary cost estimates are anticipated to be from within -30 percent to +50 percent of the actual costs for implementing each alternative.

<b>Alternative</b>	<b>Description</b>	<b>Capital</b>	<b>Annual O&amp;M</b>	<b>Present Worth</b>
3	Continued Maintenance of POETS with Land Use Controls	\$99,203	\$333,223	\$10,095,896
4	Public Water Supply with Land Use Controls	\$6,743,450	\$0.0	\$6,743,450

## **8. State Acceptance**

Commonwealth of Virginia acceptance of the Preferred Alternative will be evaluated after the public comment period ends. Commonwealth comments and EPA's response to any such comments will be available in the Responsiveness Summary section of the OU2 Interim ROD

## **9. Community Acceptance**

EPA will evaluate community acceptance of the Preferred Alternative after the public comment period ends. Public comments and EPA's response to any such comments will be included in the Responsiveness Summary section of the Interim ROD.

## **I. PREFERRED ALTERNATIVE**

The Preferred Alternative for interim remedial action at the Hidden Lane Landfill Site is Alternative 4, Public Waterline with Land Use Controls. This alternative would connect properties whose wells are currently contaminated with TCE above the MCL of 5 µg/L, and those properties which are likely to become impacted based on proximity to the groundwater contamination plume, to an extension to the existing Loudoun Water Supply system. Existing POETS would be maintained until connection to the public water supply line is completed. Existing drinking water wells would be completely disconnected from the drinking water system. Disconnected wells would either be abandoned or could be used for non-potable purposes only under certain conditions as agreed to by EPA and VADEQ. Land use controls would be put in place to ensure that residents are not exposed to unacceptable levels of site-related contaminants in groundwater and to prevent cross connection with the public water supply.

Alternative 4 would be more protective of human health than Alternative 3 because extension of the public water supply would permanently eliminate the need to use contaminated groundwater as a drinking water source. This is an important distinction, given the fact that the POETS can fail and result in short-term exposure until maintenance is performed.

Both Alternatives 3 and 4 would provide drinking water that is in compliance with chemical-specific ARARs (MCLs).

Alternative 4 would be more effective at eliminating public exposure to TCE in the site contaminated groundwater. Alternative 3 will only decrease public exposure to TCE in the site groundwater. Neither alternative would affect the toxicity, mobility, or volume of

TCE within the groundwater; TCE in groundwater will be addressed in the final remedial action for the Site.

Although Alternative 3 would be somewhat more effective at protecting the community and site workers in the short-term than Alternative 4 because POETS are already in place, safeguards to protect workers while undertaking subsurface work to install public water lines are well-established.

Both Alternatives 3 and 4 would be implementable. Although POETS are already in place for most residences that are or could be impacted by contaminated groundwater, POETS would require regular maintenance for many years, until groundwater TCE concentrations are reduced below MCLs. Alternative 4 requires more surface disturbance, but installation of public water supply lines is readily and quickly (months) implementable. Minimal maintenance of the interim remedial action would be required under Alternative 4 after connection to public water has been completed.

The cost of Alternative 4 is estimated to be \$6,743,450, which is less than the estimated \$10,095,896 cost of Alternative 3.

### **Statutory Determination**

Based on the information available at this time, EPA believes the Preferred Alternative (Alternative 4: Public Waterline with Land Use Controls) meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing criteria. EPA expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA Section 121(b): 1) to be protective of human health and the environment; 2) to comply with ARARs; 3) to be cost-effective; and 4) to utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. While the Preferred Alternative does not satisfy the preference for treatment as a principle element, it does permanently eliminate the exposure pathway to contaminated groundwater. The final remedial action for groundwater, which will be the subject of a future Proposed Plan, will address the use of treatment to clean-up contaminated groundwater to the maximum extent practicable.

## **J. COMMUNITY PARTICIPATION**

EPA encourages the public to gain a more comprehensive understanding of the Hidden Lane Landfill Site and the interim remedial action proposed in this Proposed Plan and to submit comments for consideration by EPA. A public comment period will open April 19, 2018 and close June 18, 2018. All comments must be postmarked by June 18, 2018.

Written comments, questions about the Proposed Plan or public meeting, and requests for information can be sent to:

Bruce Rundell (3HS23)  
Remedial Project Manager  
Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103  
(215) 814-3317  
[rundell.bruce@epa.gov](mailto:rundell.bruce@epa.gov)

Larry Johnson (3HS52)  
Community Involvement Coordinator  
Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103  
(215) 814-3239  
[johnson.larry-c@epa.gov](mailto:johnson.larry-c@epa.gov)

Public Meeting – A public meeting will be held to discuss the Proposed Plan on April 26, 2018 from 7:00 p.m. to 9:00 p.m. The public meeting will be held at Galilee Methodist Church, located at 45425 Winding Rd, Sterling, VA 20165.

It is important to note that, although EPA is proposing a Preferred Alternative for interim remedial action at the Site, EPA has not yet selected the interim remedial action to address groundwater for the Site. All relevant comments received will be considered and addressed by EPA before the interim remedial action is selected for the Site.

Detailed information on the material discussed herein may be found in the Administrative Record file for the Site, which includes the Interim Action FS and other information used by EPA in the decision-making process. EPA encourages the public to review the Administrative Record file to gain a more comprehensive understanding of the Site and the Superfund activities that have taken place there. Copies of the Administrative Record file are available for review at <https://go.usa.gov/xQD7r>, or at the following locations:

Cascades Library  
21030 Whitfield Place  
Potomac Falls, VA 20165  
(703) 444-3228  
<http://library.loudoun.gov>

EPA Administrative Records Room  
Attn: Administrative Records  
Coordinator  
1650 Arch Street  
Philadelphia, PA  
(215) 814-3157  
Hours: Monday through Friday, 8:00am  
to 4:30pm; by appointment only.

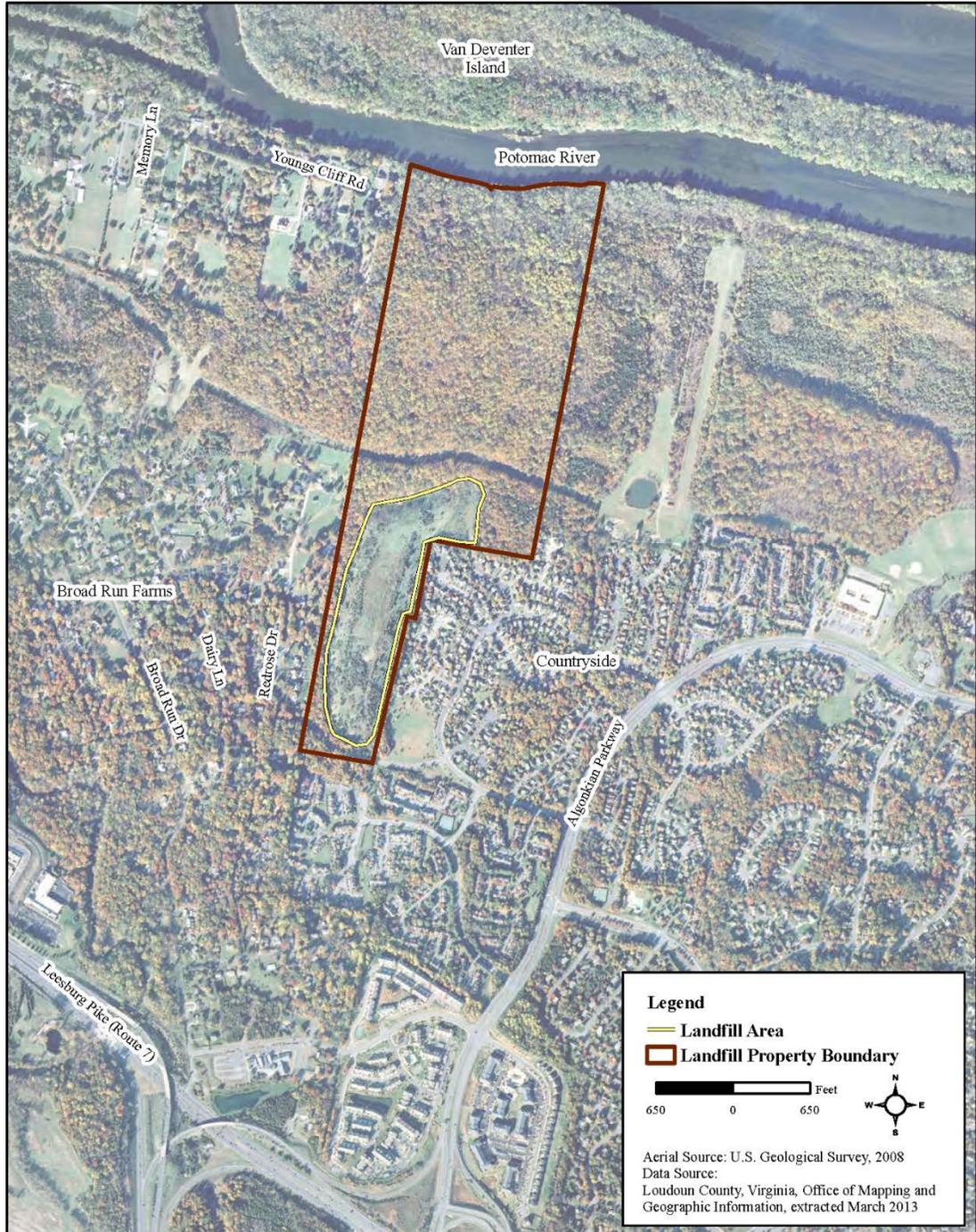
Following the conclusion of the public comment period on this Proposed Plan, EPA, in consultation with VADEQ, will select an interim remedial action to address human

exposure to site-related contaminated groundwater after reviewing and considering all information submitted during the 60-day public comment period. EPA, in consultation with VADEQ, may modify the Preferred Alternative or select another interim response action presented in this Proposed Plan based on new information or public comments.

EPA will then prepare a formal decision document, the Interim ROD, in which EPA will identify the selected interim remedial action for the Site. EPA will prepare a Responsiveness Summary which will summarize and respond to comments received during the public comment period. The Interim ROD will include the Responsiveness Summary. Copies of the Interim ROD for interim remedial action will be available for public review in the Administrative Record following issuance of the Interim ROD. EPA will notify the public of its availability.

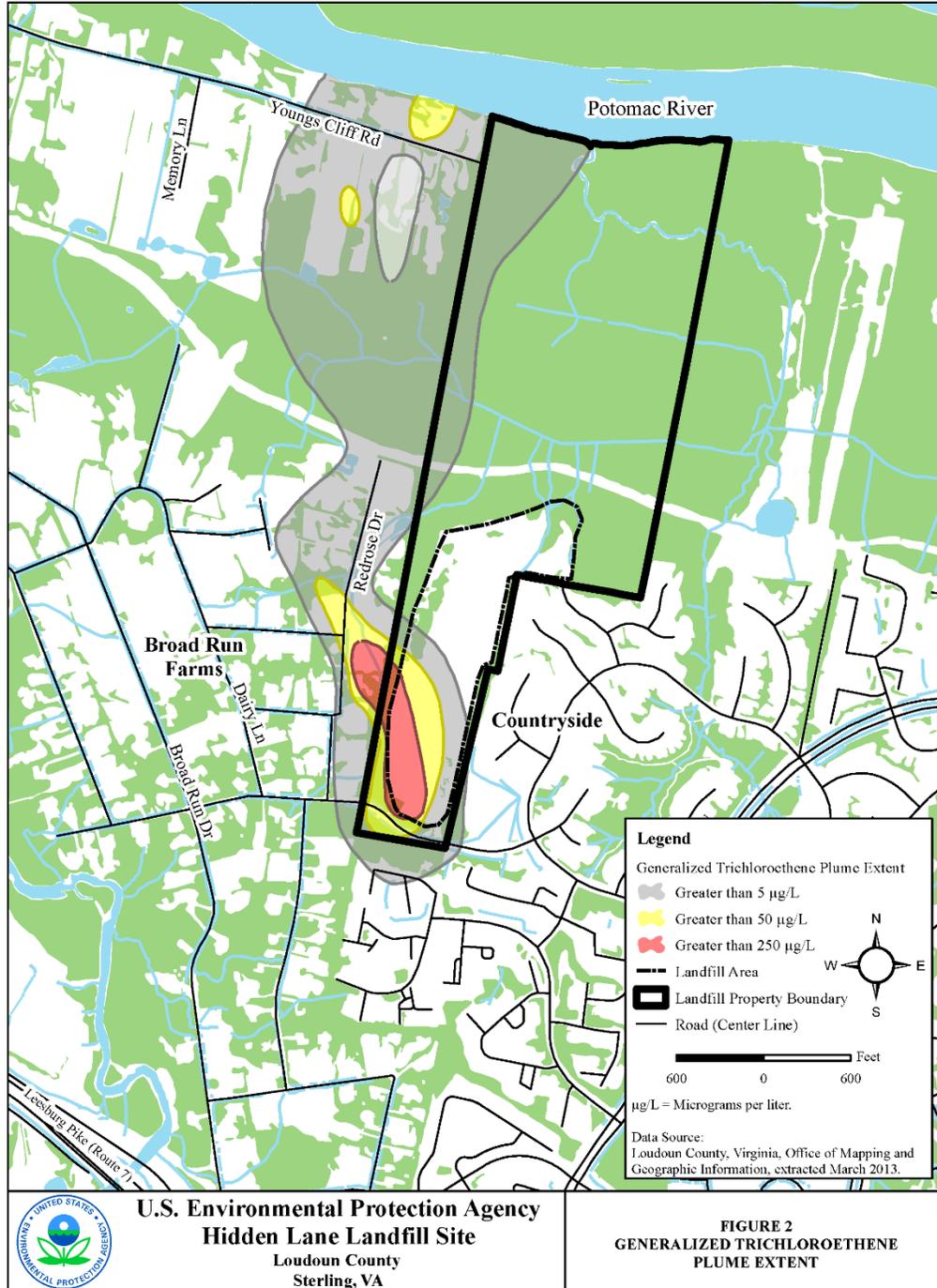
*Figures*

*Proposed Plan for  
Hidden Lane Landfill  
Superfund Site*



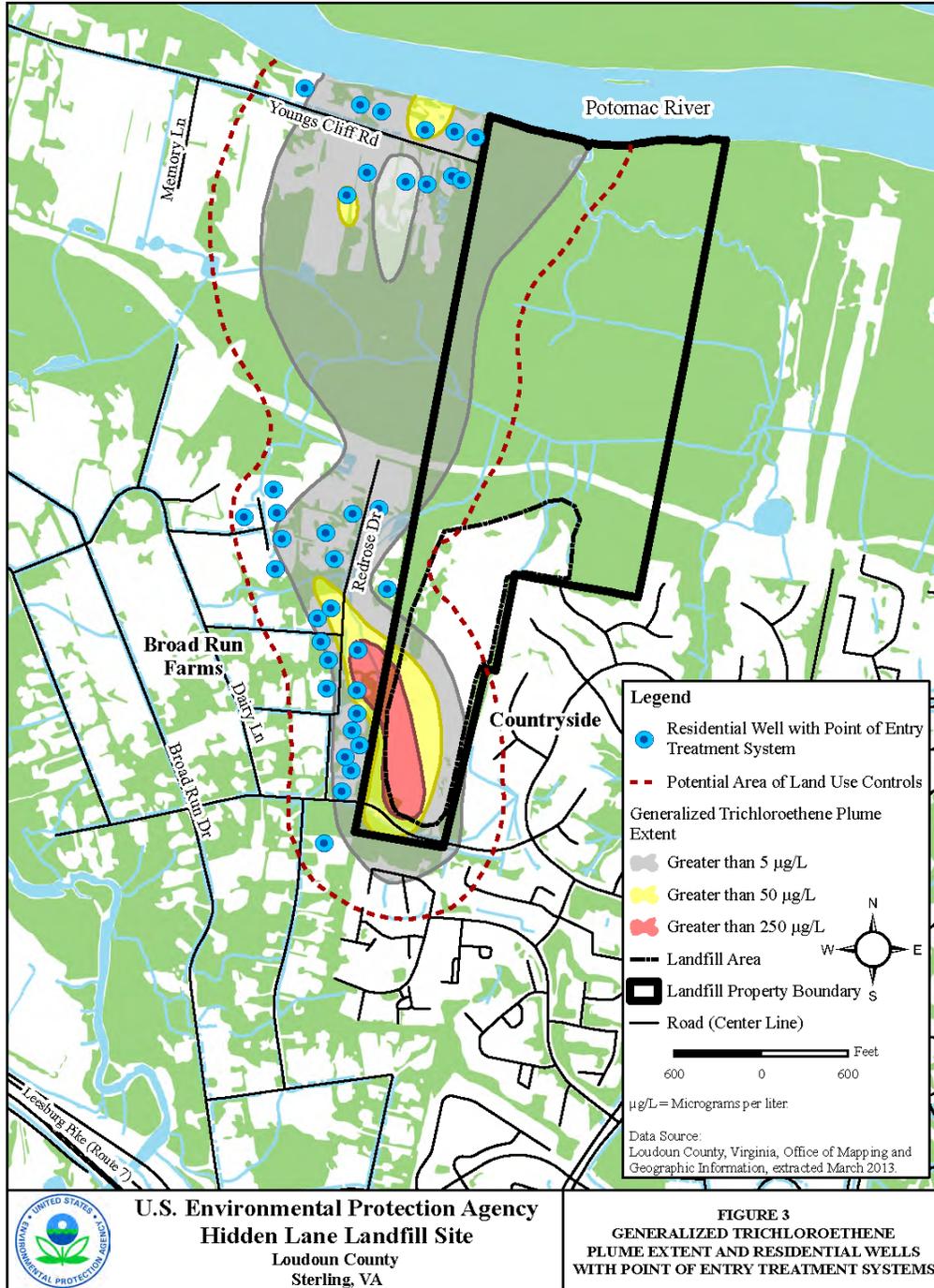
**U.S. Environmental Protection Agency**  
**Hidden Lane Landfill Site**  
 Loudoun County  
 Sterling, VA

**FIGURE 1**  
**SITE MAP**



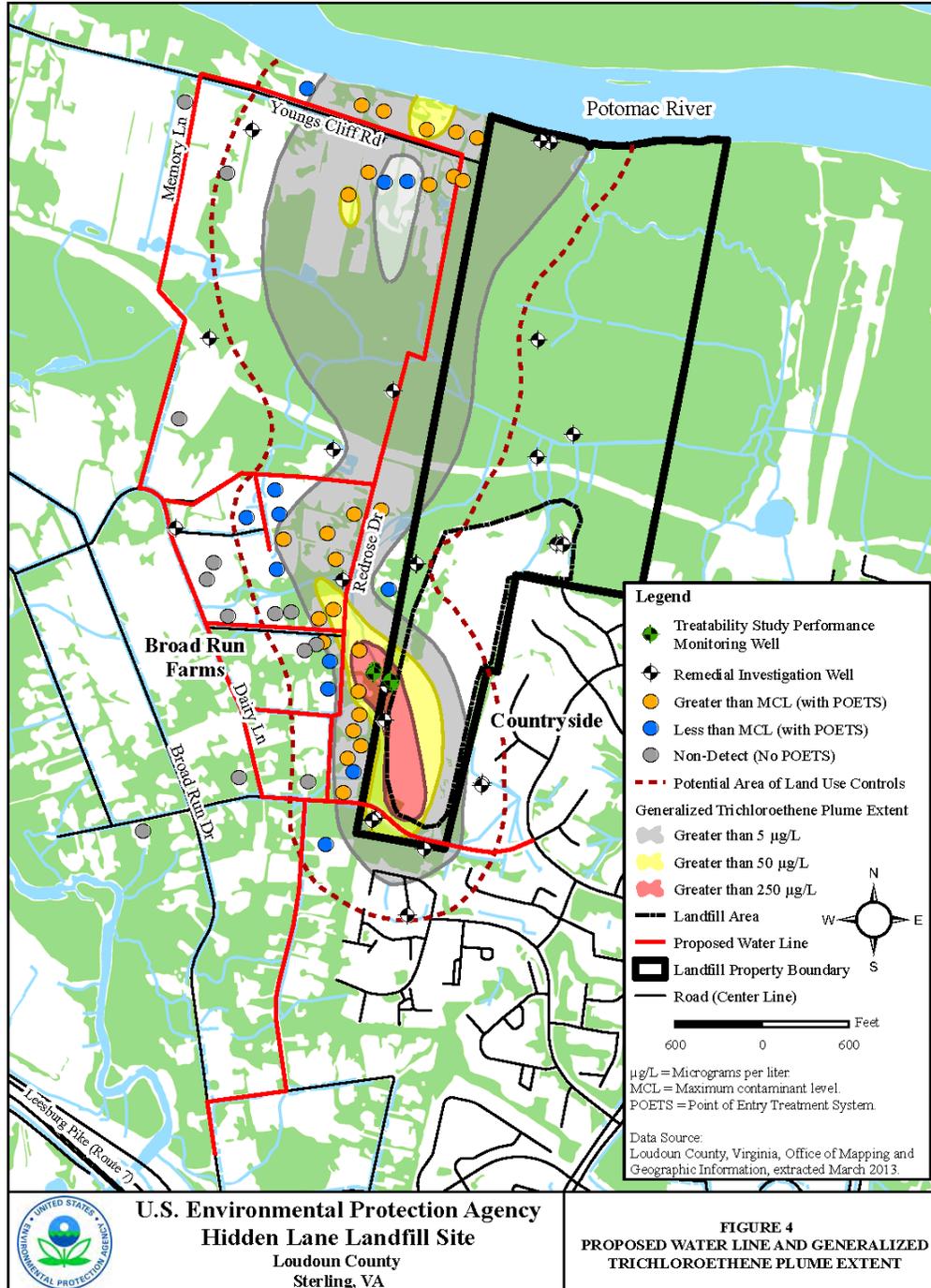
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*Tables*

**Table 1 Estimated Cost of Alternative 3—Continued Maintenance of  
Point-of-Entry Treatment Systems with LUCs**

Item No.	Cost Categories and Items	Units	Unit Cost	Quantity (#)	30 Year Total Cost
<b>A. CAPITAL COSTS</b>					
<b>1</b>	<b>Installation New Treatment Systems<sup>1</sup></b>		<b>Unit Cost</b>	<b>Quantity</b>	<b>30 Year Total Cost</b>
1.1	Installation of New Treatment Systems	Each	\$6,614	10	\$66,136
1.2	Management and Site Services	20% of costs		20%	\$13,227.10
<i>Subtotal:</i>					\$79,362.60
<b>ALL ITEMS SUBTOTAL:</b>					\$79,362.60
<i>Contingency (25%)</i>					\$19,840.65
<b>Total Capital Costs:</b>					<b>\$99,203.25</b>
<b>B. O&amp;M COSTS</b>					
<b>2</b>	<b>Maintenance of POETS</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>30 Year Total Cost</b>
2.1	Replacement of GAC Filter	Each	\$699	40	\$27,940
2.2	UV Light Replacement	Each	\$308	40	\$12,320
2.3	Emergency Calls	Each	\$308	15	\$4,620
2.4	Management and Coordination	10% of cost		10%	\$4,488.00
<i>Subtotal</i>					\$49,368.00
<b>3</b>	<b>Monitoring of POETS</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Annual cost</b>	<b>30 Year Total Cost</b>
3.1	Quarterly Sampling of POETs, including sample collection, submission to the laboratory, and analysis	Event	\$69,225	\$276,901	\$8,307,030.00
3.2	Data Validation and Management and Preparation/Submission of Residential Letters	Event	\$14,463	\$57,852.52	\$1,735,575.60
3.3	Emergency Sampling/Resampling	Per year	\$34,197	\$34,196.75	\$1,025,902.50
<i>Subtotal</i>				\$368,950.27	\$11,068,508.10
<b>Total O&amp;M Costs:</b>					<b>\$11,117,876.10</b>
<b>C. 30-YEAR PRESENT VALUE<sup>2</sup></b>					
O&M Costs		\$9,996,692			
<b>D. COST SUMMARY</b>					
<b>Cost Element</b>		<b>Cost (\$)</b>			
Capital Costs		\$99,203			
Annual O&M		\$368,950			
30 Year O&M Costs		\$9,996,692			
<b>30-Year Total Present Worth Costs</b>		<b>\$10,464,846</b>			
<b>Notes:</b>					
1. Currently 36 residences have POETs. It is assumed that an additional 10 would be added over the next 30 years.					
2. Present Value = (O&M) x (P/F), Real Discount Rate 0.7% for 30 years.					
3. As per the EPA, costs for Administrative Land Use Controls, Restoration Advisory Board Meetings, and Five-Year Reviews are not included.					

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**Table 2 Estimated Cost of Alternative 4—Connection to the Public Water Supply with LUCs**

Item No.	Cost Categories and Items	Unit Cost	Quantity	Units	Total Cost
<b>A. CAPITAL COSTS</b>					
<b>101 SITE WORK</b>					
1.1	Mobilization and Demobilization	\$53,300.00	1	LS	\$53,300
1.2	Construction Stakeout	\$24,800.00	1	LS	\$24,800
1.3	Clearing and Grubbing	\$4,300.00	10	AC	\$41,660
1.4	Maintenance of Traffic	\$1,000.00	168.8	LS	\$168,800
1.5	Restoration of Paved Surfaces	\$84.00	586	SY	\$49,240
1.6	Restoration of Unpaved Surfaces	\$69.00	422	MSF	\$29,120
1.7	Test Pitting & Utility Investigation	\$192.00	25	EA	\$4,800
1.7	Management and Site Services	20% of costs	20%		\$63,684
	<i>Subtotal</i>				<b>\$435,404</b>
<b>102 EROSION AND SEDIMENT CONTROL</b>					
2.1	Stabilized Construction Entrance	\$39.50	31	SY	\$1,250
2.2	Silt Fence	\$5.88	1000	LF	\$5,880
2.3	Management and Site Services	20% of costs	20%		\$1,426
	<i>Subtotal</i>				<b>\$7,130</b>
<b>103 WATER DISTRIBUTION PIPING</b>					
<b>103A : Pipe Installation</b>					
3A.1	12" DIP Water Pipe	\$120.00	5,550	LF	\$666,000
3A.2	8" DIP Water Pipe	\$75.00	15,550	LF	\$1,166,250
3A.3	Utility Trenching, Backfill, & Compaction	\$28.17	21,100	LF	\$594,390
3A.4	Bedding	\$41.50	781	LCY	\$32,440
3A.5	Sawcutting	\$9.80	234	SY	\$2,300
3A.6	Dewatering	\$1,025.00	169	Days	\$173,020
3B.3	Management and Site Services	20% of costs	20%		\$526,880
	<i>Subtotal</i>				<b>\$3,161,280</b>
<b>103B : Isolation Valves</b>					
3B.1	8" Gate Valve	\$2,725.00	10	EA	\$27,250
3B.2	12" Gate Valve	\$6,200.00	4	EA	\$24,800
3B.3	Management and Site Services	20% of costs	20%		\$10,410
	<i>Subtotal</i>				<b>\$62,460</b>
<b>103C : Fittings</b>					
3C.1	8" Fittings	\$23,130.00	1	LS	\$23,130
3C.2	12" Fittings	\$34,475.00	1	LS	\$34,475
3C.3	Management and Site Services	20% of costs	20%		\$11,521
	<i>Subtotal</i>				<b>\$69,126</b>
<b>103D: Waterline Connections</b>					
3D.1	Piping Tie-ins	\$2,500.00	2	EA	\$5,000
3D.2	Residential Tie-ins	\$4,000.00	75	EA	\$300,000
3D.3	Management and Site Services	20% of costs	20%		\$61,000
	<i>Subtotal</i>				<b>\$366,000</b>
<b>103E: Waterline Abandonment</b>					
3E.1	Abandon in Place Existing Waterlines/Wells	\$4,400.00	75	EA	\$330,000
3E.2	Management and Site Services	20% of costs	20%		\$66,000
	<i>Subtotal</i>				<b>\$396,000</b>
<b>103F : Waterline Disinfection &amp; Testing</b>					
3F.1	Hydrostatic Testing	\$37,452.50	1	LS	\$37,460
3F.2	Chlorination/Disinfection	\$24,792.50	1	LS	\$24,800
3F.3	Management and Site Services	20% of costs	20%		\$12,452
	<i>Subtotal</i>				<b>\$74,712</b>

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**Table 2 Estimated Cost of Alternative 4—Connection to the Public Water Supply with LUCs**

Item No.	Cost Categories and Items	Unit Cost	Quantity	Units	Total Cost
<b>103G: Miscellaneous Concrete</b>					
3G.1	Thrust Blocks on 8" 90 degree bends	\$102.00	6	EA	\$620
3G.2	Thrust Blocks on 12" 90 degree bends	\$202.00	2	EA	\$410
3G.3	Management and Site Services	20% of costs	20%		\$206
	<i>Subtotal</i>				<b>\$1,236</b>
<b>103H: Appurtenances</b>					
3H.1	Sampling Station	\$1,255.00	2	EA	\$2,510
3H.2	Hydrants	\$9,600.00	70	EA	\$672,000
3H.3	Management and Site Services	20% of costs	20%		\$134,902
	<i>Subtotal</i>				<b>\$809,412</b>
	<b>Line Item Total</b>				<b>\$4,940,226</b>
<b>104 AS-BUILT DRAWINGS</b>					
4.1	Preparation & Submission of As-Built Drawings	\$10,000.00	1	LS	\$10,000
4.2	Management and Site Services	20% of costs	20%		\$2,000
	<i>Subtotal</i>				<b>\$12,000</b>
<b>ALL LINE ITEMS SUBTOTAL:</b>					<b>\$5,394,760</b>
Contingency (25%)					\$1,348,690
<b>Total Capital Costs:</b>					<b>\$6,743,450</b>
<b>C. 30-YEAR PRESENT VALUE <sup>5</sup></b>					
O&M Costs					\$0
<b>D. COST SUMMARY</b>					
<b>Cost Element</b>					<b>Cost (\$)</b>
Capital Costs					\$6,743,450
O&M Costs					\$0
<b>30-Year Total Present Worth Costs</b>					<b>\$6,743,450</b>
<b>Notes:</b>					
1. All items are assumed to include the necessary labor, material, and equipment to furnish and install the item listed unless otherwise noted.					
2. This cost estimate does not include environmental permitting costs unless otherwise noted.					
3. This cost estimate does not include costs for construction or contract management.					
4. Subcontracting markup is applied to construction activities.					
5. Present Value = (O&M) x (P/F), Real Discount Rate 0.7% for 30 years.					
6. As per the EPA, costs for the design, Operations and Maintenance, and Administrative Land Use Controls are not included.					