


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Subject: Approval of a Request for Removal Actions for the UGI Columbia Gas Plant Superfund Site located in Columbia Borough, Lancaster County, Pennsylvania

From: David Turner, RPM 
Western PA and MD Remedial Branch (3HS22)

To: James J. Burke, Director
Hazardous Site Cleanup Division (3HS00)

NOV 02 2008

I. Issue

The purpose of this Action Memorandum ("Memorandum") is to document the United States Environmental Protection Agency's approval of the time critical removal action pursuant to Section 104 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. Section 9604, in connection with the UGI Columbia Gas Plant Superfund Site (the "Site") located in Lancaster County, Pennsylvania and to seek approval to initiate those response actions.

In April 1996, PPL entered into a Consent Order and Agreement ("Consent Order") with the Pennsylvania Department of Environmental Protection ("PADEP") to conduct a Remedial Investigation ("RI") and Feasibility Study ("FS"). The PADEP-approved RI identified the presence of manufactured gas plant ("MGP") -related hazardous substances, including benzene, toluene, and xylene ("BTEX"); polycyclic aromatic hydrocarbons ("PAHs"); arsenic, and cyanide in groundwater and soils at the Site. In 2002, PADEP approved PPL's FS which proposed several response actions for addressing the remaining contamination at the Site.

The primary objective of the removal action is to implement certain non-complex response actions identified in the FS. The removal action is an appropriate measure by which to abate, mitigate, and/or eliminate the threat of release of BTEX; PAHs; arsenic and cyanide at the Site.

By approval of this Memorandum, EPA Region III has determined that 1) there is a release or threat of release of a hazardous substance, pollutant, or contaminant into the environment; 2) the conditions at the Site may present an imminent and substantial endangerment to public health, or welfare, or the environment, and; 3) conditions at the Site meet the criteria of the National Contingency Plan ("NCP"), 40 C.F.R. Section 300.415 for removal actions. The actions necessary to abate the threats at this Site are anticipated to require less than 12 months for completion. The anticipated response actions have been estimated to have a project cost of \$1.99 million

An Administrative Record has been prepared for this removal action.

II. Background

A. Site Description

1. Physical Location

The Site is located in Columbia Borough, Lancaster County, Pennsylvania, approximately four hundred feet northeast of the Susquehanna River. The Site includes a former MGP facility ("MGP Facility") which occupies approximately 1.6 acres which houses two buildings which are abandoned and in disrepair; the Borough of Columbia's ("Borough's") municipal garage; the Lancaster Water Authority ("LWA") pumping station; railroad tracks owned by Consolidated Rail Corporation ("CONRAIL"); and a pedestrian tunnel which extends underneath the railroad tracks on the northern side of the MGP Facility.

2. Site History

From approximately 1851 to 1949, PPL's predecessors in interest used the MGP Facility to manufacture gas for distribution in the City of Columbia. Gas was historically produced at the MGP Facility through a coal gasification process which included reacting steam with hot coal, coke and wood. The gas went from two gas generating sets through a washbox, condenser, washer cooler, and then was stored in a gas holder. From the gas holder, the gas went through a coal tar separator and a purifier and finally to a relief holder for distribution in the City of Columbia.

From approximately 1949 to 1950, UGI and its predecessors in interest produced a propane/air mixture at the MGP Facility. During its ownership of the MGP Facility, UGI demolished, removed and/or backfilled various MGP-related structures.

The MGP Facility is currently not in use and PPL is the current owner of the MGP Facility.

3. Release or Threatened Release into the Environment of Hazardous Substances or Pollutants or Contaminants

The primary waste stream generated during the coal gasification process was liquid coal tar. Coal tar is a mixture of organic chemicals comprising VOCs including BTEX; SVOCs including PAHs, and inorganics including metals and cyanide (hereinafter collectively referred to as "MGP-related hazardous substances").

The MGP operations have caused Site soils, which are believed to include soils under the two abandoned on-Site buildings, and groundwater to become contaminated

with hazardous substances including BTEX; PAHs; metals, and cyanide. All of these substances are hazardous substances within the meaning of Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14), because they are listed at 40 C.F.R. Section 302.4.

Based on the information described above, EPA has determined that a threat to public health, welfare and/or the environment exists due to the threatened release of hazardous substances from the Site.

4. National Priorities List Status

EPA proposed the Site for inclusion on the Superfund National Priorities List ("NPL") in June 1993 and added the Site to the NPL in May 1994.

B. Actions

1. Previous Actions

In December 1984, PPL and UGI voluntarily agreed with the Pennsylvania Department of Environmental Resources ("PADER"), which was subsequently renamed the Pennsylvania Department of Environmental Protection ("PADEP"), to perform a Site Investigation to determine the nature and extent of contamination at the Site. Samples collected during the Site Investigation revealed that on-Site soils and groundwater were contaminated with VOCs, PAHs, heavy metals, and cyanide.

In January 1991, EPA conducted an Expanded Site Investigation ("ESI") at the Site. Sampling results from the ESI revealed that MGP related wastes containing VOCs, PAHs, and cyanide had migrated into groundwater, soil and bedrock.

In April 1996, PPL entered into a Consent Order and Agreement ("1996 Order") with PADEP to conduct a Remedial Investigation ("RI")/ Feasibility Study ("FS") and a Risk Assessment ("RA") to, among other things, determine the nature and extent of contamination at the Site; characterize the risks to human health and the environment, and evaluate alternatives to clean up the contamination at the Site. For purposes of consistency with the Superfund program, EPA oversaw the work done by PPL under the 1996 Order with PADEP.

The PADEP-approved RI identified approximately 15,000 cubic yards of remaining contaminated surface and subsurface soils at the Site. For surface soils at depths of 6 inches and above, the following contaminants were found at levels above their respective Risk-Based Concentrations ("RBCs"):

SVOCs (PAHs): Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene.

Inorganics: Arsenic.

For subsurface soils at depths of below 6 inches, the following contaminants were found at levels above their RBCs:

SVOCs (PAH)s: Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene.

Inorganics: Arsenic.

The RI also identified contamination in on-Site groundwater that had migrated from the MGP. The following hazardous substances were found in on-Site groundwater above their respective MCLs:

VOCs: Benzene, Ethylbenzene, Tetrachloroethene, Toluene, Trichloroethene, 1,2,4- Trimethylbenzene, and Xylenes (total).

SVOCs (PAHs): Acenaphthene, Acenaphthylene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(a)pyrene, Chrysene, Fluoranthene, 1-Methylnaphthalene, 2-Methylnaphthalene, Naphthalene, Phenanthrene, and Pyrene.

Other SVOCs: Bis(2-ethylhexyl)phthalate, and Dibenzofuran.

Inorganics: Aluminum, Barium, Cyanide, Iron, Lead, and Manganese.

2. Current Actions

Currently there are no response actions being performed at the Site. This Memorandum proposes and selects a removal response action to abate, mitigate and/or eliminate the releases of contaminants from the Site. Please refer to Section V.A., below, for a description of the proposed actions.

C. State and Local Roles

1. State and Local Actions to Date

As discussed in Section II.B., above, PADEP was the lead agency overseeing the RI/FS work being conducted by PPL at the Site under the 1996 Order. EPA retained its authority to review Site-related activities to ensure compliance with CERCLA and the NCP and to select the final remedy for the Site.

2. Potential for Continued State/Local Response

The removal action at the Site will be conducted under CERCLA authority. PADEP will be provided an opportunity to review and provide timely comments on project design documents and work plans. Coordination efforts between EPA, PADEP, and local authorities will continue throughout the project.

III. Threats to Public Health or Welfare or the Environment

The removal action is an appropriate measure by which to abate, mitigate, and/or eliminate the threat of release of BTEX; PAHs; arsenic and cyanide at the Site because the conditions at the Site which may present an imminent and substantial endangerment to public health, or welfare, or the environment will continue if the removal action is not taken; the proposed removal actions are relatively simple measures to address Site-related contamination identified in the RI; and several of the factors listed in Section 300.415(b)(2) of the NCP apply to the Site.

Section 300.415(b)(2) of the NCP lists factors to be considered in determining the appropriateness of a Removal Action. Paragraphs (b)(2), (i)(ii)(iv), (v) and (vii) of Section 300.415 directly apply to conditions at the Site as follows:

- A. 300.415(b)(2)(i) *“Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants”*

Hazardous substances, pollutants, or contaminants are present in the groundwater and surface soils, which are believed to include soils underneath the two buildings, at the Site and potentially present a risk of exposure to human populations.

Groundwater containing MGP-related hazardous substances is currently being used by the Lancaster Water Authority (“LWA”) to supply a portion of the drinking water for Columbia Borough. The LWA treats the groundwater obtained from its wells with activated carbon to make it potable in accordance with PADEP requirements.

Concentrations of MGP-related hazardous substances in soils have been identified as possibly having adverse effects on on-Site workers. There is a potential for soil to pose a moderate cancer risk to construction workers as a result of direct contact with surface and subsurface soils during excavation without personal protective equipment. In addition, because the Site is not presently secure, local residents who come onto the Site could possibly be exposed to MGP-related hazardous substances through dermal contact.

- B. 300.415(b)(2)(ii) *“Actual or potential contamination of drinking water supplies or sensitive ecosystems”*

LWA drinking water supply wells are located approximately 300 feet away from the Site. During the RI, groundwater samples taken from LWA’s wells were found to contain MGP-related hazardous substances.

- C. 300.415(b)(2)(iv) *“High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate”*

MGP-related hazardous substances have the potential to migrate from the Site via surface water runoff.

- D. 300.415(b)(2)(v) *“Weather conditions that may cause hazardous substances or pollutants or contaminants to mitigate or be released”*

Runoff from rainfall and annual snowfall melt events increase the likelihood that MGP-related hazardous substances will migrate from the Site via surface water runoff and infiltration.

- E. 300.415(b)(2)(vii) *“The availability or other appropriate federal or state response mechanisms to respond to the release”*

PADEP does not possess the resources to undertake a removal action at this time.

IV. Endangerment Determination

Based on information gathered in connection with the Site, actual and threatened release of hazardous substances from this Site, if not addressed by conducting the Removal Action proposed in this Memorandum, may present a potential imminent and substantial endangerment to public health, welfare, or the environment. As such, the proposed response action set forth in this Memorandum should be implemented to abate the threats presented.

V. Proposed Actions and Estimated Costs

A. Proposed Actions

- 2.1 The removal action proposed for the Site is designed to mitigate the threat posed to public health, welfare, and the environment by potential exposure to MGP-related hazardous substances. The removal action will include the following:
- (a) Install at a minimum an eight (8)-inch concrete cap over the area of the former holders as depicted in Figure 5-2 in the FS (See Attachment A for a copy of Figure 5-2) sufficient to prevent the migration of contaminants through surface water runoff and infiltration;
 - (b) Install at a minimum a four (4)-inch asphalt and/or concrete cap over areas where MGP-related waste remains in the subsurface as depicted in Figure 5-2 in the FS (See Attachment A for a copy of Figure 5-2) sufficient to

prevent the migration of contaminants through surface water runoff and infiltration;

- (c) Demolish two (2) on-Site buildings so that the areas where MGP-related waste remains in the subsurface as depicted in Figure 5-2 in the FS (See Attachment A for a copy of Figure 5-2) are completely and uniformly capped pursuant to (a) and (b), above;
- (d) Excavate any soils and MGP-related wastes as necessary to facilitate installation of the caps pursuant to (a) and (b), above;
- (e) Characterize soils excavated pursuant to (d), above, and dispose off-Site all such soils in accordance with Section 121(d)(3) of CERCLA, 42 U.S.C. Section 9621(d)(3), and 40 C.F.R. Section 300.440;
- (f) Place clean fill on MGP Facility as necessary to facilitate installation of the caps pursuant to (a) and (b), above;
- (g) Install groundwater monitoring wells in locations accepted by EPA for the purpose of monitoring MGP-related contaminants in the groundwater plume;
- (h) Conduct sampling and analysis of groundwater from wells installed pursuant to (g), above, for the purpose of monitoring MGP-related contaminants in the groundwater plume and
- (i) Provide site specific health and safety measures, including preparation and implementation of a Health and Safety Plan ("HASP") for actions to be performed at the Site, to protect the health and safety of workers, other personnel and the public from the hazardous substances and work-related health and safety hazards during performance of the response action specified herein. The HASP shall, as appropriate, provide for proper decontamination of personnel and equipment, monitoring and control of offsite migration of hazardous substances during the performance of activities at the Site and protection of public health from exposure to hazardous substances during the conduct of activities at the Site pursuant to this Settlement Agreement. Health and safety requirements in the HASP shall be at least as stringent as those set forth in Occupational Safety and Health Administration and EPA requirements, including but not limited to, requirements contained in 29 C.F.R. § 1910.120 and/or EPA Standard Operating Safety Guides (July 5, 1988).

B. Contribution to Remedial Performance

The Site is listed on the NPL. The proposed actions are expected to abate, mitigate and/or eliminate the threats that meet NCP removal criteria. The actions proposed are consistent with any long term or remedial action that might be necessary at the Site.

C. Compliance with Applicable or Relevant and Appropriate environmental and health requirements (ARARs)

The Applicable or Relevant and Appropriate environmental and health requirements ("ARARs") for this removal action were listed in the PADEP-approved FS for the Site. The proposed removal action set forth in this Memorandum will comply with all ARARs, to the extent practicable, considering the exigencies of the situation.

D. Project Schedule

Upon approval of the proposed removal actions in this Memorandum and issuance of an appropriate Agency implementation document, it is anticipated that PPL and UGI will implement the proposed removal actions in accordance with an expeditious schedule.

E. Estimated Cost

The project ceiling is estimated at \$1,995,149 over a one year period. See the following for estimated cost breakdown:

Extramural Costs:

ERRS:	\$ 1,543,124
START:	\$ 50,000
CLP:	\$ 19,500
USACE:	\$ 50,000

Extramural Subtotal: \$ 1,662,624

Extramural Cost Contingency: \$ 332,525
(20% of Subtotal Extramural)

Total Removal Project Ceiling: \$ 1,995,149

VI. Expected Change in the Situation Should No Action be Taken or Action Delayed

In the event that actions proposed in this Memorandum are not approved or are delayed, the release or potential release of hazardous substances from the Site will continue.

VII. Outstanding Policy Issues

There are no outstanding policy issues pertaining to the Site.

VIII. Enforcement

See Enforcement Addendum in Attachment B.

The total EPA costs for this Removal Action based upon full-cost accounting practices that will be eligible for cost recovery, as modified by certain bankruptcy stipulation, are estimated below as follows¹:

Direct Extramural Costs:	\$ 1,995,149
Direct Intramural Costs:	\$ 75,000

Indirect Costs (55%):	\$ 1,138,581
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Estimated EPA Costs for Removal Action: \$ 3,208,730

IX. Recommendation

This Action Memorandum represents the selected removal action for UGI Columbia Gas Plant Superfund Site, in Columbia Borough, Lancaster County, Pennsylvania, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. The proposed removal actions implement certain non-complex response actions identified in the RI for the Site. This decision is based on the administrative record for the Site. Additional actions may be appropriate and necessary to abate, mitigate, and/or eliminate the threat of release of BTEX; PAHs; arsenic and cyanide at the Site

¹ As required by OSWER 9360.0-42, this footnote is included herein: Direct Costs include direct extramural costs and direct intramural costs. Indirect Costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a Removal Action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

Pursuant to section 113 (K) of CERCLA and EPA Delegation No. 14-22, I hereby establish the documents listed in Attachment C, hereto, as the Administrative Record supporting the issuance of this Action Memorandum. Because conditions at the Site meet the criteria in NCP, 40 C.F.R. Section 300.415 criteria for a removal action, I recommend your approval of the proposed removal actions. Please indicate your approval or disapproval by signing below.

APPROVED: James J. Boyle DATE: 11/2/06

DISAPPROVED: _____ DATE: _____