Chapter 15: Contaminated and Hazardous Materials

A. INTRODUCTION

When conducting construction activities there is potential for contaminated materials to be encountered. The term "contaminated materials" refers to soil, groundwater, or building materials that contain substances potentially harmful to human health and/or the environment. Contaminated materials are most often encountered during construction activities in industrial areas or in areas historically used for industrial purposes. This chapter assesses the potential for the presence of contaminated materials within the study area, the potential risks to human health and/or the environment that may be posed by disturbing any such materials and specific measures that would be employed to mitigate any such risks.

The potential for contaminated materials to be present within the study area was evaluated through the use of historical maps and aerial photographs to identify areas of past or present industrial use within the study area, a review of regulatory records and databases to identify sites known or suspected to contain contaminated materials within the study area, and a review of regulatory files for those sites identified.

As discussed in Chapter 2, "Project Alternatives," this Environmental Assessment (EA) evaluates two Build Alternatives: Alternative 9A and Alternative 9B. Alternative 9A was selected as the Preferred Alternative.

POTENTIAL CONTAMINANTS

Historical and regulatory research indicated that portions of the study area were used for various purposes that may have contaminated soil and/or groundwater. These uses included railroad operations, railroad car repair and maintenance, ship building, electrical substation operations, aircraft engine manufacturing, cleaning product, aerosol, and acrylics manufacturing, adhesives manufacturing, bulk petroleum/pesticide storage and distribution, dry cleaning, gasoline filling stations, automobile maintenance and repair, manufactured gas plant (MGP) operations, and polyvinyl chloride (PVC) resin manufacturing. Based on these land uses, there is potential for the following contaminants to be encountered during the construction phase of the Proposed Project: polychlorinated biphenyls (PCBs), heavy metals (such as arsenic and lead), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, petroleum compounds, and asbestos.

The use of PCBs began in the 1930s in electrical capacitors and transformers, hydraulic fluids, and in heat transfer systems. Rail lines, railroad maintenance facilities, and electrical transformers are potential sources for PCBs in the study area. Arsenic and other herbicides may also be present along rail lines as they were often used to control vegetation. Many train engines use diesel fuel and therefore diesel range organics (DRO) are a common contaminant in rail yards and along rail lines.

Other heavy metals such as antimony, copper, lead, mercury, and vanadium could potentially be encountered in the study area as they are widely used in various industrial applications. Slag,, historically used as a fill material in industrial areas or as railroad track ballast, is a source of heavy metals that could potentially be encountered in the study area. Research has shown that heavy metals can leach from slag into soil and groundwater.

VOCs that may potentially be encountered within the study area include tetrachloroethene (PCE) in the vicinity of Havre de Grace as well as 1,1 dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane (TCA), trichloroethene (TCE), and vinyl chloride (VC) in the vicinity of Havre de Grace. Degreasing and parts washing fluids are also sources of PCE and TCE and are widely used in various industrial applications. Other VOCs that could potentially be encountered in the study area include benzene, toluene, ethylbenzene, and xylenes (BTEX) found in various petroleum products. SVOCs that may be encountered in the study area include polycyclic aromatic hydrocarbons (PAHs) that are found in petroleum products and also may be formed by incomplete combustion of carbon-containing fuels like coal. Partially combusted coal and coal ash were historically used as fill materials in industrial areas or as railroad track ballast. Coal tar and coal tar derived products such as creosote are also sources of PAHs that may be present in the study area. Wooden railroad ties were often treated with creosote for preservation.

Based on the age of the existing bridge, there is also the potential that asbestos-containing materials (ACM) are present in the bridge or in the approaches to the bridge (e.g., in electrical insulation, tar paper, caulks or utility lines). Asbestos could also potentially be encountered within the study area in buildings or areas where buildings were located or in materials have been dumped. Removal or disturbance of asbestos is subject to extensive regulatory requirements, including those relating to testing, agency notification, licensing and certifications, removal and disposal. Similarly, the bridge and other structures in the study area may include lead-based paint. Activities with the potential to disturb lead-based paint are also subject to multiple regulatory programs including Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62 - Lead Exposure in Construction).

B. METHODOLOGY

REGULATORY CONTEXT

There are numerous state and federal regulations applicable to the above potential contaminants. NEPA, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and the Toxic Substances Control Act (TSCA) are examples of federal regulations applicable to these contaminants. Many laws and regulations have been enacted throughout the U.S. at the state level to implement these federal regulations. The Maryland Department of the Environment (MDE) is the regulatory agency responsible for enacting and enforcing these federal regulations in Maryland. MDE regulations are described in the Code of Maryland Regulations (COMAR) under Title 26.

REGULATORY RECORDS SEARCH

The Maryland Department of Transportation (MDOT) subcontracted Environmental Data Resources, Inc. (EDR) to search federal, state, and/or local agency databases to find information about any sites that may pose environmental concerns within the study area and surrounding properties. The EDR search boundary consisted of the study area plus a one-mile buffer and is

depicted on Figure 1 of **Appendix G**, "Contaminated Materials Technical Report." The EDR Corridor Report is included in **Appendix G**. Federal and state regulatory agencies maintain databases of investigated sites that are then used to identify potential environmental concerns. These databases include, but are not limited to, the following:

- National Priority List (NPL) (also known as Superfund sites)
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
- CERCLIS No Further Remedial Action Planned (NFRAP) list
- State Hazardous Waste Site (SHWS) - State of Maryland HWS list
- Maryland Oil Control Program (OCP) Case Sites
- State of Maryland Historic (HIST) Leaking Underground Storage Tank (LUST) list
- Maryland Solid Waste Facilities list
- Maryland Brownfields List
- Resource Conservation and Recovery Act (RCRA) Information System:
  - RCRA Treatment, Storage and Disposal (TSD) Sites
  - RCRA CORRACTS and non-CORRACTS (Corrective Action Sites)
- Emergency Response Notification System (ERNS)

The Project Team evaluated the location of the sites and the (generally limited) information provided in the EDR Corridor Report to assess which sites could present potential environmental hazards within the study area. The Project Team submitted Public Information Act (PIA) requests to MDE to obtain additional information for those sites that appeared to present potential environmental concerns based on their listings. After reviewing the information obtained from the PIA request, the Project Team conducted a reconnaissance to visually evaluate the identified sites of potential concern and other potential environmental hazards within the study area not identified in regulatory databases.

C. AFFECTED ENVIRONMENT

The historic research, the EDR Corridor Report, and documents obtained from the PIA requests to MDE were evaluated to determine sites of potential concern for the Proposed Project. After these sites were determined, the available information for each site was evaluated and the sites were categorized as green, yellow, or orange. Green sites are low potential environmental hazard sites and would generally be regarded as not needing further evaluation or investigation. Green sites have minimal environmental issues or are sufficiently far from the study area to likely have little or no environmental impact. Yellow sites are moderate potential environmental hazard sites that may be impacted by the Proposed Project. These should be regarded with caution because moderate contamination may remain in site soil and/or groundwater. Orange sites are high potential environmental hazard sites, to be regarded with additional caution due to the likelihood of encountering soil and/or groundwater contamination and/or treatment system components.

A total of 58 sites of potential concern were identified based on the historic research and regulatory file reviews. Of the 58 sites, 37 were classified as green, 19 as yellow, and 2 as orange. The yellow and orange sites are listed in **Table 15-1**. The site locations maps and a list of green sites are provided in **Appendix G**.

Table 15-1
Sites of Potential Concern

Yellow Sites	
GAF Transportation	Pulaski Highway - East Shoulder, Aberdeen
Pool Concepts Inc.	2226 Pulaski Highway, Havre de Grace
Bay Oil, Inc.	2110 Pulaski Highway, Havre de Grace
Friendly Oil Company - Aero Energy	1757 Pulaski Highway, Havre de Grace
Osborne Boat Sales	1754 Pulaski Highway, Havre de Grace
F.W. Haxel Co.	1750 Pulaski Highway, Havre de Grace
Havre de Grace Exxon	1609 Pulaski Highway, Havre de Grace
Cytec Engineered Materials, Inc.	1300 Revolution Street, Havre de Grace
A-1 Sales, Inc.	1200 Pulaski Highway, Havre de Grace
Auto Ranch - Harbor Station	1005 Pulaski Highway, Havre de Grace
MCK Trucking Co.	963 Pulaski Highway, Havre de Grace
Former Carroll's Laundry	Franklin Street and Adams Street, Havre de Grace
Former Gas Stations	Warren Street and N. Union Ave., Havre de Grace
Gilbert Tank Farm – Gilbert Enterprises	Water Street, Havre de Grace
Former Pennsylvania Railroad Shops	Broad Street and Front Street, Perryville
Perryville Electrical Substation	Ave A, Perryville
Norfolk Southern Railroad	450 - 452 Harford Street, Perryville
Perryville Chevron - Former Perryville Texaco	636 Broad Street, Perryville
The National Railroad Passenger Corporation (Amtrak) Maintenance Facility Yard - Amtrak MOW	644 Broad Street, Perryville
Orange Sites	
Ames Shopping Plaza - Master Cleaners	2015-2113 Pulaski Highway, Havre de Grace
Cleaning Solutions Group Site - Cello Site	1354 Old Post Road, Havre de Grace

The Ames Shopping Plaza-Master Cleaners site is approximately 500 feet west of the study area at 2015-2213 Pulaski Highway in Havre de Grace. Dry cleaning operations were conducted at the site between 1969 and 2003. Investigations have indicated groundwater PCE concentrations up to 77,000 µg/L; well above the MDE groundwater clean-up standard of 5 µg/L. Recent investigations have indicated that a significant PCE plume is present in groundwater beneath the site and that the plume is migrating east (i.e., towards the study area). Review of a contaminant plume cross section prepared by MDE in 2012 indicates that concentrations of PCE as high as 5,000 µg/L are present within the study area. These concentrations may have increased since 2012 or may increase over time as significantly higher concentrations of PCE were detected in groundwater up-gradient of the study area.

The Cleaning Solutions Group Site - Cello Site is located partially within the study area at 1354 Old Post Road in Havre de Grace. Hexall first used the Cello site during the 1940s to manufacture aircraft engines. Subsequently Alcolac operated the site, and later, beginning the in 1960s, the site was operated by Fuild-Stauford, a subsidiary of Alcolac. The operations that occurred during Fuild-Stauford's use are unknown. In 1977, Cello Corporation, purchased the site and used it to manufacture cleaning products, aerosols, and acrylics. In 1995, Cello was

purchased by ICI. In March 1996, the Sherwin Williams Company purchased Cello from ICI. Site operations under Sherwin Williams have remained essentially the same as the historical operations of Cello. Between July 1985 and August 1987, MDE observed the unauthorized discharge of pollutants from the Cello site and the placement of pollutants in locations likely to result in unauthorized discharges. In 1988, an Administrative Consent Order required that Cello conduct an investigation to determine the extent of contamination that may have resulted from these unauthorized discharges. Investigations indicated the presence of VOCs in groundwater at the site at concentrations exceeding regulatory criteria. VOCs detected in groundwater at the site included 1,1-dichloroethene, 1,1-dichloroethane, TCA, trichloroethene (TCE), VC, chloroethane, 1,2-DCA, 1,2-dichloroethene (1,2-DCE), carbon tetrachloride, 1,1,2-trichloroethane, xylenes, acetone, and methylene chloride. The investigations indicated that groundwater beneath the site flows north and then east, i.e., away from the study area.

D. NO ACTION ALTERNATIVE

Under the No Action Alternative, the demolition and subsurface disturbance associated with the Proposed Project will not occur. Although the assessment above identified a high potential for contaminated materials (including groundwater contaminated with chlorinated solvents), without subsurface disturbance there would be no significant potential for exposure (and associated potential for adverse impacts) to occur. The sites near the study area would continue to be addressed by state and federal regulatory agencies, independent of the Proposed Project.

E. POTENTIAL IMPACTS OF THE BUILD ALTERNATIVES

This section analyzes the potential for impacts from Alternative 9A and Alternative 9B. Because of the similarity in alignments and the existing areas of contamination presented above, the following discussion applies to both Build Alternatives.

Construction of the Proposed Project would involve demolition, relocation or other disturbance of existing structures and excavation, relocation and potentially off-site disposal of some existing soil. Dewatering might also be required. The exact extent of disturbance associated with the Proposed Project will not be determined until final engineering, and the presence of contaminated materials would only present a threat to human health if exposure to these materials occurs. A health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. To prevent such exposure pathways and doses during construction, the Proposed Project would include appropriate health and safety and investigative/remedial measures. The need for additional investigation/remediation will be determined, in consultation with MDE, once the exact extent of disturbance is identified.

The most likely route of exposure would be breathing volatile/semi-volatile compounds or particulate-laden air released during demolition, excavation, or construction activities. In order to prevent this and other exposure pathways, the Proposed Project would include measures such as:

- Follow established regulatory requirements for pre-construction removal of asbestos and appropriate management of lead-based paint and of PCB-containing equipment.
- Develop and implement an environmental Construction Health and Safety Plan (CHASP), conforming to applicable local, state, and federal regulatory requirements, including procedures for:

- Managing known or potential contamination (e.g., railroad ties, creosote-contaminated soil and any underground storage tanks unexpectedly encountered);
- Minimizing and monitoring the generation of dust;
- Characterizing surplus materials requiring off-site disposal;
- Dewatering, including pre-treatment prior to discharge if needed;
- Importing clean fill for grading during construction.

The Proposed Project documents and construction specifications will address procedures for stockpiling, testing, loading, transporting (including truck routes), and properly disposing of all excavated materials requiring off-site disposal. Excavated materials will be characterized to classify the materials (e.g., as hazardous waste, petroleum-contaminated wastes, chromate-contaminated soils, historical fill containing construction and demolition debris, or uncontaminated native soils). Wastes containing hazardous materials require special handling, storage, transportation, and disposal methods to prevent releases that could impact human health or the environment. Depending on the nature of the materials, federal, state, and local regulations require the use of special containers or stockpiling practices for on-site storage of the materials to prevent the release of hazardous materials to the environment. The federal, state, and local departments of transportation have requirements for transportation of wastes containing hazardous materials. Facilities that receive hazardous materials require federal, state, and local permits to accept the waste, and generally require that specific representative waste sampling and laboratory analysis protocols be conducted prior to accepting materials for disposal. The extent and parameters of testing are dependent on the requirements of the waste disposal facilities, each of which may have different requirements for representative waste sampling and laboratory analysis prior to accepting materials for disposal.

Dewatering of groundwater will most likely be required in specific locations. Where dewatering is required, it is possible that the water will require treatment prior to its discharge to surface water or existing sewers. Prior to any such discharge, the water will be tested. Discharge of water will be conducted in accordance with applicable requirements, including state requirements for discharge to surface water, and state and local requirements for sewer discharge.

With the implementation of these measures, no significant adverse impacts related to hazardous materials will result from the demolition and construction activities associated with the Proposed Project. In addition, no significant adverse impacts related to hazardous materials would be expected to result from operation of the Proposed Project. ✷