FIFTH FIVE-YEAR REVIEW REPORT FOR FIRST PIEDMONT ROCK QUARRY (Route 719) SUPERFUND SITE PITTSYLVANIA COUNTY, VIRGINIA EPA ID No. VAD980554984

January 2020

Prepared by

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Date

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS

AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FFS	Focused Feasibility Study
FYR	Five-Year Review
GMUC	Groundwater Migration Under Control
HEUC	Human Exposure under Control
HHPA	Human Health Protection Achieved
IC	Institutional Control
LOEC	Lowest Observable Effects Concentration
MCL	Maximum Contaminant Level
mg/kg	Milligram per kilogram
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
RI	Remedial Investigation
RAO	Remedial Action Objective
RBC	Risk-based Concentration
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
RSL	Regional Screening Levels
SWRAU	Sitewide Ready for Anticipated Use
TBC	To Be Considered
UECA	Universal Environmental Covenants Act
UU/UE	Unlimited Use and Unrestricted Exposure
µg/L	Microgram per Liter
VDEQ	Virginia Department of Environmental Quality

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports such as this one. In addition, FYR reports identify issues found during the review, if any, and present recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the First Piedmont Rock Quarry Superfund Site (Site). The triggering action for this statutory review is the signature date of the fourth FYR Report, dated February 3, 2015. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The FYR was led by Bruce Rundell, EPA Remedial Project Manager (RPM). Participants included Evelyn Sorto, EPA RPM; Mark Leipert, EPA Hydrogeologist; Linda Watson, EPA Toxicologist; Bruce Pluta, EPA Biological Technical Assistance Group; Megan Keegan Broughton, EPA Community Involvement Coordinator; William Lindsay, Virginia Department of Environmental Quality (VDEQ) Remediation Project Manager; Thomas Wade, First Piedmont, one of the Potentially Responsible Parties (PRPs); and Mike Williams, Golder Associates, contractor for PRPs. All of the PRPs were notified of the initiation of the FYR.

Site Background

The Site is located along Route 719 (also known as Lawless Creek Road) in Pittsylvania County, Virginia, near the intersection with Route 360. It is approximately six miles north of the city of Danville (see Figure C-1). The main portion of the Site includes the rock quarry/landfill area, two additional waste disposal areas ("Carbon Black Pile" and "Waste Pile"), and a sediment excavation area in the floodplain of Lawless Creek.

Most of the land use in the immediate Site vicinity is woodlands, pastures, and/or open fields. The closest home to the Site is approximately 150 feet from the Site in the Beaver Park community. These residences are located side- and up-gradient from the landfill portion of the Site. All homes in Beaver Park obtain residential water from either wells or springs. No Site-related contamination has ever been detected in residential wells. Approximately 455 people live within one mile of the Site; approximately 1,893 people live within a two-mile radius of the Site.

The Site initially operated as a 2-acre quarry for crushed stone. The First Piedmont Corporation leased a 4-acre parcel of land which included the quarry for disposal of industrial and agricultural waste from April 1, 1970 to April 1, 1975. The landfill operations were restricted, almost exclusively, to the quarry area. Wastes were disposed in the landfill from April 1970 to July 1972, when the Virginia Department of Health ordered waste disposal operations to cease due to a fire on the landfill.

FIVE-YEAR REVIEW SUMMARY FORM

Site Name: First Piedmont Rock Quarry (Route 719) Superfund Site		
EPA ID: VAD980554984		
Region: 3	**State:** Virginia	**City/County:** Pittsylvania County

NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

Lead agency: EPA
Author name: Bruce Rundell / Evelyn Sorto
Author affiliation: EPA Region 3
Review period: 2/4/2019 - 2/3/2020
Date of site inspection: 5/7/2019
Type of review: Statutory
Review number: 5
Triggering action date: 2/3/2015
Due date *(five years after triggering action date)*: 2/3/2020

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The quarry was not filled in a systematic fashion. No cells or segregated disposal areas were used for specific wastes. Wastes were generally dumped at the high wall along the eastern edge of the landfill upon arrival at the Site. Wastes were then moved within the two-acre quarry footprint and compacted down with a bulldozer. Hundreds of drums were buried in the landfill in a random fashion with other solid waste. Subsequent investigations by EPA indicated that wastes disposed at the Site were not covered at the end of each day. The Site, therefore, was operated like an open dump rather than a modern day landfill operation.

The landfill contains approximately 65,000 cubic yards of industrial and agricultural waste. Approximately 3,000 cubic yards of soil were used as a landfill cover when landfill operations were stopped. Industrial wastes were generated by the Goodyear Tire and Rubber Company (Goodyear) and

Corning Glass Works (Corning). Agricultural wastes were primarily generated by Southern Processors, Inc. (Southern Processors).

Separate and apart from the landfill are two other waste disposal areas within the main fenced area on the Site. These two areas are denoted as the Carbon Black Pile and the Waste Pile (see Figure C-2). The Carbon Black Pile consisted of approximately 1,260 cubic yards of carbon black and contaminated soils. "Carbon black" is a reinforcement additive used in tire manufacturing that is comprised almost entirely of carbon. The Carbon Black Pile is located approximately 150 feet from the most western edge of the landfill. The Waste Pile contained approximately 95 cubic yards of waste material, consisting of waste steel and nylon tire cording, waste glass, waste rubber strips, and contaminated soils. The Waste Pile is located about 75 feet from the western edge of the landfill.

The Goodyear Tire and Rubber Company, in a letter dated June 1, 1981, notified the First Piedmont Corporation that some of Goodyear's wastes deposited at the Site were hazardous wastes pursuant to Resource Conservation and Recovery Act (RCRA) regulations. Approximately 15,000 gallons of a mixture of residual MS-20 (a floor degreaser), containing ten percent by volume of tetrachloroethylene (PCE), was disposed in waste washwaters by Goodyear at the Site. PCE is a listed hazardous waste under RCRA, 42 U.S.C. §§ 6901 et seq. The EPA Field Investigation Team subcontractor sampled the various media in the landfill vicinity in July 1983, to provide data for EPA to determine whether the landfill should be proposed for listing on the National Priorities List (NPL). The Site was listed on the NPL on July 21, 1987.

EPA sent Special Notice Letters on May 6, 1986 to initiate negotiations with First Piedmont, Corning, and Goodyear (the PRPs) to perform a Remedial Investigation/Feasibility Study (RI/FS) for the Site. On December 31, 1987, EPA signed an Administrative Order on Consent (AOC) with the PRPs to undertake the RI/FS of the Site. The RI/FS was designed to determine the nature and extent of contamination at the Site and to identify and evaluate remedial alternatives for remediation at the Site.

During the RI, several media were sampled including leachate, surface waters, groundwater (shallow and deep), residential wells, soils (surface and subsurface), and sediments. Based on the sampling results, EPA identified 14 contaminants of concern (COCs) for the Site's leachate, surface waters, groundwater, soils, and sediments. The contaminants were all detected at concentrations exceeding background levels. The COCs included antimony, arsenic, barium, benzene, bis(2-ethylhexyl) phthalate, cadmium, copper, lead, manganese, mercury, nickel, selenium, vanadium, and zinc. Although PCE was disposed at the Site, the compound was not detected in any of the sampled media at levels exceeding health-based criteria. Therefore, it was not identified as a COC.

As part of the RI, a Baseline Risk Assessment was prepared. The assessment found that the concentrations of antimony, barium, lead, and arsenic in the Site's leachate posed human health risks through the potential ingestion of quarry leachate. It also concluded that the levels of lead detected in the Site's source material and quarry soil presented a risk to human health due to the possible incidental ingestion of soil by children playing in the source material or quarry soil.

Response Actions

The Remedial Action Objectives (RAOs) for the Site were established during the FS. The RAOs were:

- Prevent human contact with materials containing COCs,

- Prevent the off-site migration of COCs, and

- Prevent COCs in surface water from being discharged to Lawless Creek or reduce concentrations of COCs in surface water to levels that pose no risk to the environment.

A Record of Decision (ROD) was signed by EPA on June 28, 1991. The ROD described the selected remedy for the Site and addressed all the contaminated media known to exist at the Site at that time. The selected remedy consisted of:

- Excavation and off-site disposal of the non-landfill wastes (including the Carbon Black Pile, Waste Pile, and select Northern Drainage soils and sediments),

- Off-site disposal of the surface drums and debris,

- Installation of a RCRA Subtitle-C cap over the landfill,

- Installation of a leachate collection system and an on-Site leachate storage system,

- Installation of groundwater monitoring wells and development of a routine monitoring system, and

- Implementation of institutional controls for the Site.

Status of Implementation – 1991 ROD

The following is a summary of the remedial activities conducted at the Site in accordance with the June 28, 1991 ROD:

- Carbon Black Excavation: A total of 1,260 cubic yards of Carbon Black Pile soil was excavated and disposed off-site between September and October 1994.

- Waste Pile: Ninety-five (95) cubic yards of waste material was removed and disposed off-site as a special waste in a RCRA Subtitle-D landfill in September 1994.

- Drum and Debris Removal: A total of 96 drums and 100 cubic yards of tires and debris were removed from the Site and disposed off-site in a RCRA Subtitle-D landfill between September and October 1994.

- Gas Venting Layer: Three gas vents were installed on the landfill portion of the Site to release any methane build up. Placement and grading of the gas venting layer were completed from October to November 1994.

- Installation of Landfill Cap: Installation of the Geosynthetic Clay Liner (GCL) and the final landfill cap/cover material was completed from November 1994 to January 1995.

- Leachate Collection System: Leachate collection system construction was completed in October 1995. The system collects leachate in a trench excavated below the top of bedrock at the western

edge of the landfill. The leachate in the trench collects in a 4-inch slotted polyvinyl chloride (PVC) pipe, which is surrounded by fill material. Leachate flows into the collection sump at the southern end of the trench and is then pumped to primary and secondary 20,000-gallon storage tanks. Leachate is sampled quarterly and disposed at Danville's publicly owned treatment works (POTW).

- Wetland Revegetation and Monitoring: The remedial action included the planting of vegetation and berry-producing shrubs in the disturbed portion of the Northern Drainage Area. The Operation and Maintenance plan called for an annual "walk through" site inspection by a qualified biologist for the first five years following the completion of the remedial work. The biologist checked the Northern Drainage Area for evidence of plant and vegetation succession. The plants were growing and becoming established as designed.

- Groundwater Monitoring: Groundwater monitoring is conducted at existing wells up and down-gradient of the landfill to determine whether the remedy is protective of human health and the environment. Groundwater monitoring will continue as long as leachate is collected and treated at the Site, or for 30 years, whichever is longer.

- Institutional Controls: Institutional controls, including fencing to prevent access to the Site and a deed restriction to prohibit future development, including residential use of the Site.

2007 ESD and Excavation at the Carbon Black Pile

After sediments and surface water in the Southern Drainage were found to be contaminated with metals, the PRPs were required to perform additional investigations. From these investigations EPA concluded that zinc oxide disposed of at the Carbon Black Pile was the primary of source of zinc in the sediment of the Southern Drainage and Lawless Creek areas and that additional excavation of the Carbon Black Pile was required in order to address zinc contamination in these two areas to protect the environment.

In May 2007, EPA issued an Explanation of Significant Differences (ESD) that documented a modification of the original excavation and off-site disposal of the Carbon Black Pile component of the selected remedy. The 1991 ROD did not call for soil cleanup standards for zinc. During the 1994 excavation of the Carbon Black Pile, excavation ended when no more carbon black was visible. The ESD established a cleanup level for zinc and required that soils with zinc concentrations exceeding 200.2 mg/kg be excavated and disposed off-site in a RCRA Subtitle-D Landfill to mitigate the migration of zinc to downgradient areas, sediments, and state waters. This cleanup level was selected because it corresponded to the lower confidence limit for the Lowest Observable Effects Concentration (LOEC) for zinc.

Status of Implementation – 2007 ESD

The excavation activities at the Carbon Black Pile started in August 2008 and were completed in January 2009. The excavation resulted in the removal of approximately 608 tons of soil, 10 yards of debris and trash, and 1,600 gallons of stormwater that accumulated during the excavation activities. Final confirmation sampling results indicated that the zinc concentrations at the bottom of the excavation area ranged from 55.6 mg/kg to 161 mg/kg, with an average concentration of 94.7 mg/kg, well below the remedial cleanup level of 200.2 mg/kg. The excavation area was backfilled with clean fill material and excavated areas were restored to approximate preconstruction conditions and grade.

2014 ROD Amendment and Excavation at the Southern Drainage Area and Lawless Creek Floodplain

The PRPs prepared and submitted a Focused Feasibility Study (FFS) to EPA in April 2010 and an Addendum in July 2011 to address zinc contamination found in the sediments in the Southern Drainage area and Lawless Creek Floodplain that could pose a risk to ecological receptors. The FFS also established the RAO as attainment of the ecological risk-based cleanup level of 148.6 mg/kg zinc for site soils within 2 feet of the existing surface within the Southern Drainage area and Lawless Creek Floodplain.

Based upon the FFS Report and the July 2011 FFS Report Addendum, EPA signed a ROD Amendment on September 23, 2014 consisting of the following components:

- Excavation of zinc contaminated sediments from the Southern Drainage and contaminated soils and sediments from Lawless Creek Floodplain,
- Transportation of zinc contaminated sediment and soil off-site to a permitted disposal facility,
- Reclamation of the excavated area will include backfilling of soils and planting of vegetation,
- Institutional controls will be implemented to ensure that sediments and soils in the wetland area are not disturbed through any activity,
- Monitoring for sediment and erosion control will be required until the wetland portion of OU1 is successfully re-vegetated,
- Wetland impacts will be further mitigated through the purchase of wetland credits from a mitigation bank at a ratio of 2:1, and
- Institutional controls will be required to prevent the surface cap, the leachate collection system, and the temporary tank in which the leachate is stored in OU1 from being disturbed.

Status of Implementation – 2014 ROD Amendment

The excavation at the Southern Drainage area and Lawless Creek Floodplain was performed from August to November 2017. The work plan called for the removal of soils with zinc concentrations exceeding the cleanup goal of 148.6 mg/kg in the upper 24 inches. It was decided during field operations to continue the contaminated soil excavation deeper than 24 inches where necessary to achieve the performance standard. No soil exceeding zinc concentrations of 148.6 mg/kg was left in place. The excavation resulted in the removal of 420 cubic yards (62.2 tons) of vegetative debris, 2,655 cubic yards (3,188 tons) of impacted soils, 200 gallons of wastewater, and 13.85 tons of general trash. The area was then backfilled with clean soil and planted. The PRPs also purchased 1.42 wetland credits to offset the temporary impacts to the 0.71-acre of delineated wetlands in the floodplain removal area. No land use restrictions were needed in the wetland area, because all soil/sediments above the cleanup goal were removed.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	No	No	Sitewide (Parcel ID No. 2430-53-0601; 12.03 acres)	Restrict the extraction of groundwater beneath the site and prohibit the use of groundwater beneath the site for potable or non-potable purposes	Universal Environmental Covenants Act (UECA) Environmental Covenant, November 2018
Capped Areas	Yes	Yes	Sitewide (Parcel ID No. 2430-53-0601; 2.3 acres)	Maintenance of the landfill cap, leachate collection system, and leachate holding tanks. Prohibit use for residential purposes, maintenance and repairs for the Site's fencing.	UECA Environmental Covenant, November 2018

Systems Operations/Operation & Maintenance

The PRPs operate and maintain the landfill cover, the leachate collection and storage system, the groundwater monitoring system, and the fenced area of the Site on a rolling basis. Groundwater sampling is conducted semi-annually. Leachate is temporarily stored on-site in two, 20,000-gallon storage tanks. The leachate is sampled quarterly and hauled to the City of Danville's POTW for treatment.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last five-year review and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2015 FYR

Protectiveness Determination	Protectiveness Statement
Short-term Protective	The remedy at the Site currently protects human health in the short-term because the elements of the remedy that have already been implemented are functioning as intended. The chain link security fence around the Site restricts access and reduces the potential for exposure to Site contaminants. The RCRA cap on the landfill prevents direct contact with the waste, minimizes migration of contaminants to the groundwater, and reduces the generation of leachate. There is no evidence or erosion or breach of the RCRA cap on the landfill. The collection and off-site disposal of leachate reduce the potential for direct contact with the leachate. The Carbon Black Pile, the Waste Pile, debris and drums have been removed and treated off-site which reduces the potential of direct contact with these contaminated material. However, in the long-term, the remedy is not protective of the environment because the zinc contaminated soils and sediments in the Lawless Creek Wetlands area and the Southern Drainage area have not been cleaned up. In order for the remedy to be protective in the long-term, institutional controls need to be implemented to protect the integrity of the remedy and prevent exposure to contaminated soil and groundwater. Metals were detected in several monitoring wells at variable levels. Groundwater monitoring will continue.

Table 3: Status of Recommendations from the 2015 FYR

Issue	Recommendation	Current Status	Completion Date (if applicable)
The remedial action has not been implemented	The PRPs will submit a remedial design for review.	Completed	The remedial design was submitted on February 1, 2016 and excavation at the Southern Drainage area and Lawless Creek Floodplain was performed from August to November 2017. The Remedial Action Completion Report for Zinc-Impacted soils in Lawless Creek Floodplain was approved on December 13, 2018.
Institutional controls have not been implemented	EPA will work with the PRP's to finalize language for the deed notice.	Completed	UECA Environmental Covenant filed with Pittsylvania County, VA on November 2, 2018.
A portion of the fence and several monitoring wells have been damaged	The PRPs will repair the damaged fence and monitoring wells.	Completed	Monitoring wells were repaired on March 5, 2019. The fence was repaired on April 12, 2018. Fence repairs are now routinely made when damaged by falling trees.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available in the Danville Register & Bee on December 5, 2019, stating that there was a FYR underway and inviting the public to submit any comments to EPA. The results of the review and the report will be made available at the Site information repository located at the Pittsylvania County Public Library, 24 Military Drive, Chatham, Virginia 24531, and online at https://www.epa.gov/superfund/firstpiedmont. A copy of the public notice is available in Appendix E.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The results of these interviews are summarized below.

On May 7, 2019, Megan Keegan Broughton (Community Involvement Coordinator, CIC) conducted four in-person interviews for the FYR. The CIC interviewed a representative from the City of Danville, a local resident, a local business owner, and a representative from a Pittsylvania County non-governmental community organization. The CIC also conducted an interview via email with the VDEQ Project Manager on November 11, 2019.

Interview responses indicated a lack of awareness of the Site, with the resident, business owner, and community organization representative not knowing about the Site. The city representative was aware of and knowledgeable about the Site. The community organization representative and business owner requested more information about the Site and the resident expressed concern about the safety of drinking water wells close to the Site. All local respondents indicated that mailed Site updates would be the best way to communicate with the community. The city representative noted that the area had been subject to local flooding from recent extreme weather events, which could impact the Site.

VDEQ noted that the remedy is currently functioning as designed, and that current operation and maintenance activities are adequate. The VDEQ official expressed no concerns regarding trespass or vandalism and is not aware of any complaints or inquiries regarding site-related issues from the local community. The VDEQ official had no comments, suggestions, or recommendations about the Site.

Data Review

This FYR consisted of a review of relevant documents, monitoring data, and Applicable or Relevant and Appropriate Requirements (ARARs) identified in the ROD. The following documents and data were reviewed for this FYR:

- Groundwater Monitoring Data (2000 thru 2019)
- Remedial Action Completion Report of Zinc-Impacted Soils in the Lawless Creek Floodplain (July 10, 2018)
- Fourth FYR Report (February 3, 2015)
- Record of Decision Amendment (September 23, 2014)
- Explanation of Significant Differences (May 30, 2007)
- Record of Decision (June 28, 1991)

The 1991 ROD states that the Site-related groundwater concentrations of lead and zinc were elevated when compared to background. EPA's hydrogeologist and toxicologist reviewed leachate and

groundwater data from November 2000 to March 2019. Concentrations were compared with the EPA's tap water Regional Screening Levels (RSLs). No unacceptable Site-related risk was identified. Upgradient background concentrations for total chromium in MW-1A and 1B (Figure C-3) were below both the Maximum Contaminant Level (MCL) for total chromium and the RSL for trivalent chromium. These total chromium concentrations were above the hexavalent chromium RSL. Geologic and land use conditions upgradient of the Site make the elevated presence of hexavalent chromium unlikely. However, the analysis for hexavalent chromium has not been conducted. Therefore, a definitive statement concerning the valence state of upgradient chromium levels cannot be made.

Groundwater concentrations were also evaluated for non-cancer human health risks. Potential non-cancer health risk due to manganese levels in MW-8A were calculated to be elevated for both a child and adult resident. MW-8A is located downgradient of the landfill (Figures C-2 and C-3). Wells MW-2A, 3A, and 4A, are all located downgradient and much closer to the landfill. None of these wells show elevated risk due to manganese. Turbidity levels in MW-8A were also noted to be higher than other wells. The presence of rock particulates in the sample could result in biased high analytical results. The lack of elevated manganese concentrations in monitoring wells closer to the landfill and the higher than normal turbidity levels in MW-8A suggest that elevated levels of manganese in MW-8A are due to turbidity rather than Site activity.

Site Inspection

The FYR site inspection was conducted on May 7, 2019. In attendance were Bruce Rundell, EPA RPM; Evelyn Sorto, EPA RPM; Mark Leipert, EPA Hydrogeologist; Megan Keegan Broughton, CIC; William Lindsay, VDEQ Remediation Project Manager; Thomas Wade, First Piedmont Corporation; and Mike Williams, Golder Associates.

The objective of the inspection was to assess the protectiveness of the remedy. The portion of the Site where the former landfill, Waste Pile, and the Carbon Black Pile are located is completely fenced. The group noted that the fence was intact and observed signs at the two entrances. The signs included a precautionary statement and identified the Site as a hazardous waste site. The cap on the landfill is in good condition and there were no signs of erosion on the cap. The vegetation on the cap was cut and in good condition. Participants also visited the on-site monitoring wells and leachate collection system. They observed that several wells had been repaired and all were in good condition (Appendix D, Photos 1-4). The leachate collection system was operating and the tanks are emptied once a week. Finally, the group also visited the wetland area (Lawless Creek Floodplain) and observed that the vegetation in this area was in good condition with no evidence of erosion. Mr. Wade and Mr. Williams noted that prior to the site inspection, the area had experienced heavy rainfall and flooding of the area.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

Yes, the remedy is functioning as intended by the decision documents. The remedy at the Site currently protects human health and the environment because all elements of the remedy have been implemented and are effective. The RCRA cap on the landfill prevents direct contact with the waste, minimizes

migration of contaminants to the groundwater, and reduces the generation of leachate. There is no evidence of erosion or breach of the RCRA cap on the landfill. The collection and off-site disposal of leachate reduces the potential for direct contact with the leachate. The Carbon Black Pile, the Waste Pile, debris and drums have been removed and treated off-site, which eliminates the potential of direct contact with contaminated material from these sources. The chain link security fence restricts access to the portion of the Site where waste within the landfill has been left in place.

Residual contamination from the former Carbon Black Pile was excavated and disposed off-site between August 2008 and January 2009. This material was believed to be the source of the zinc contamination in the Southern Drainage area and Lawless Creek Floodplain. In 2017, contaminated sediment and soils with zinc concentrations exceeding 148.6 mg/kg were excavated from the Southern Drainage area and Lawless Creek Floodplain and disposed off-site. The area was backfilled with clean-soil and wetland vegetation was replanted.

Institutional controls have been implemented in the form of a UECA covenant for the entire site (Figure C-1). Institutional controls prevent disturbance of the RCRA cap, the leachate collection system, and leachate storage tanks. Institutional controls restricting the use of groundwater at the Site were also included in the UECA covenant. Groundwater restrictions were not called for in any decision documents but were added to the UECA by the PRPs at their discretion. Institutional controls in the zinc-impacted soils area of the Lawless Creek Floodplain are not necessary because no soils above cleanup levels were left in place.

Several times a year, leachate is sent to Danville POTW. The leachate has to meet the POTW standards in order to be accepted for treatment. If the POTW standards are not met, the leachate must be pre-treated before the POTW will accept the leachate. As of November 2019, there have been no instances in which the leachate required pre-treatment.

The remedial actions performed at the Site achieved the cleanup goals outlined in the 1991 ROD, 2007 ESD, and 2014 ROD Amendment and institutional controls have been implemented. No further Superfund response, other than O&M, monitoring, and FYRs is needed to protect human health and the environment. The Site should be evaluated for deletion from the NPL.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

Yes, the exposure assumptions, toxicity date, cleanup levels, and RAOs for both human health and the environment remain protective. However, the 1991 ROD did not include RAOs for ecological receptors nor did it address the Southern Drainage Area or Lawless Creek Floodplain. EPA established a cleanup level of 200.2 mg/kg for zinc-contaminated soils located in the former Carbon Black Pile in the May 30, 2007 ESD because the 1991 ROD performance standard was based on visible contamination. EPA issued a ROD Amendment in September 2014 which established an ecologically based cleanup level (148.6 mg/kg) for zinc-contaminated sediments and soil in the Southern Drainage Area and Lawless Creek Floodplain.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

Question C Summary:

No other information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

OU(s) without Issues/Recommendations Identified in the FYR:
Sitewide: No issues or recommendations were identified by this FYR.

VII. PROTECTIVENESS STATEMENT

Protectiveness Determination: Protective
Protectiveness Statement: The remedial actions performed at the Site achieved the cleanup goals outlined in the 1991 ROD, 2007 ESD, and 2014 ROD Amendment and institutional controls have been implemented. Although O&M, monitoring, and FYRs, are needed to protect human health and the environment, no further Superfund response action is necessary. Therefore, the Site is protective of human health and the environment in the long term.

VIII. GOVERNMENT PERFORMANCE AND RESULTS ACT MEASURES

As part of this FYR, the Government Performance and Results Act (GPRA) Measures have been reviewed. The GPRA Measures and their status are as follows:

Environmental Indicators
Human Health: Long-Term Human Health Protection Achieved (HHPA)
Groundwater Migration: Contaminated Groundwater Migration Under Control (GMUC)

Sitewide Ready for Anticipated Use (SWRAU)
The Site achieved SWRAU status on December 26, 2018.

IX. NEXT REVIEW

The next FYR Report for the First Piedmont Rock Quarry Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Explanation of Significant Differences First Piedmont Corp. Rock Quarry (Route 719), Pittsylvania County, Virginia, United States. EPA Region 3. May 30, 2007.

Fourth Five-Year Review Report for First Piedmont Rock Quarry (Route 719) Superfund Site, Pittsylvania County, Virginia, United States. EPA Region 3. February 3, 2015.

Record of Decision First Piedmont Rock Quarry/Route 719, Danville, Virginia, United States. EPA Region 3. June 28, 1991.

Record of Decision Amendment Operable Unit 1 First Piedmont Rock Quarry (Route 719) Superfund Site, Danville, Virginia, United States. EPA Region 3. September 23, 2014.

Remedial Action Completion Report, Revised July 10, 2018, Zinc-Impacted Soils in the Lawless Creek Floodplain First Piedmont Rock Quarry/Route 719 Superfund Site, Pittsylvania County, Virginia, United States. Golder Associates. July 10, 2018.

Remedial Action Report First Piedmont Rock Quarry/Route 719 Superfund Site, Pittsylvania County, Virginia, United States. ENSCI Engineering Group, P.A. July 25, 1995.

Revised Removal Action Field Services Report First Piedmont Rock Quarry/Route 719 Superfund Site, Pittsylvania County, Virginia, United States. Golder Associates. September 9, 2009.

Superfund Preliminary Site Close Out Report (Final Operable Unit Remedial Action), First Piedmont Rock Quarry, Blairs, Pittsylvania County, Virginia, United States. EPA Region 3. September 27, 1995.

UECA Environmental Covenant, Pittsylvania County, Virginia, United States. Clerk's Office of Pittsylvania County. November 2, 2018.

APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
First Piedmont placed waste in the quarry.	**April 1970**
Goodyear notified Fist Piedmont that they had sent hazardous waste to the quarry.	**June 1, 1981**
EPA placed the Site on the National Priorities List (NPL).	**July 21, 1987**
EPA and First Piedmont Corporation, Coming Glass Works and the Goodyear Tire and Rubber Company (the Potentially Responsible Parties or (PRPs)) signed an Administrative Order on Consent (AOC) to conduct the Remedial Investigation/Feasibility Study (RI/FS).	**December 31, 1987**
EPA issued A Record of Decision (ROD).	**June 28, 1991**
EPA and the PRPs entered into a Consent Decree for implementation of the Remedial Design/Remedial Action (RD/RA).	**July 23, 1992**
PRPs initiated the construction activity.	**September 6, 1994**
EPA and PRPs conducted the final inspection at the Site.	**April 27, 1995**
EPA issued the Preliminary Site Closeout Report.	**September 27, 1995**
First FYR Report.	**September 30, 1999**
Additional Site Investigation Report First Piedmont Rock Quarry Superfund Site, Route 719, Pittsylvania County, Virginia.	**December 2001**
Zinc Source Investigation Report - First Piedmont Rock Quarry Superfund Site, Route 719, Pittsylvania County, Virginia.	**December 2003**
Draft Investigation Approach for Additional Remedial Investigation Work at the First Piedmont Rock Quarry Superfund Site, Route 719, Pittsylvania County, Virginia.	**September 2004**
Second FYR Report.	**February 3, 2005**
Additional Site Investigations Work Plan for the Lawless Creek Floodplain and former Carbon Black Disposal Area was approved by EPA.	**March 2005**
Request for Jurisdictional Determination (Waterway or Wetlands Area), First Piedmont Rock Quarry Superfund Site, Golder Associates, Inc.	**June 7, 2006**

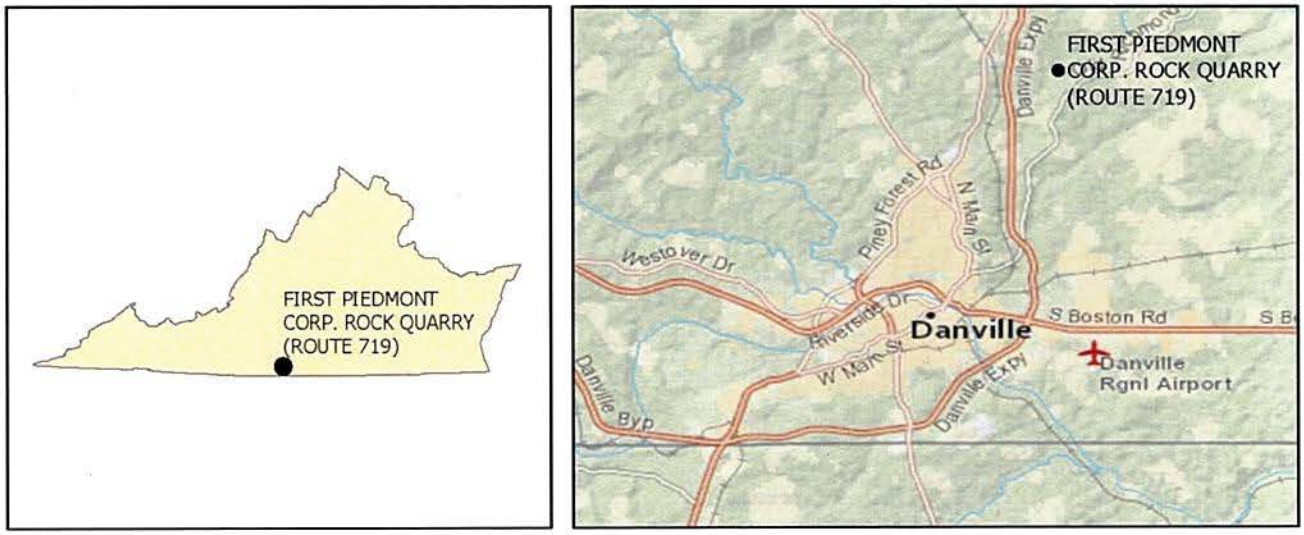
Event	Date
Jurisdictional Delineation Confirmation, Waterway - Lawless Creek, First Piedmont Superfund Site - By U.S. Army Corps of Engineers, Norfolk District, Eastern Virginia Regulatory Section, Nottoway, VA 23955.	**June 14, 2006**
EPA signed an Explanation of Significant Differences (ESD) selecting 200.2 mg/kg or less of zinc in soil as the cleanup standard for soils and remediation of the former Carbon Black Disposal Area.	**May 30, 2007**
Former Carbon Black Disposal Area Remedial Action activities began.	**December 15, 2008**
Former Carbon Black Disposal Area Remedial Action activities were completed.	**January 2, 2009**
PRP's submitted the Site Inspection and Spring Planting Letter Report.	**May 29, 2009**
EPA completes the final inspection.	**July 2009**
Third Five Year Review Report.	**February 3, 2010**
Focused Feasibility Study Report- Remediation of Zinc Contaminated Soils and Sediments in Southern Drainage and Floodplain or Wetlands of Lawless Creek.	**April 2010**
Focused Feasibility Study Addendum Report- Remediation of Zinc Contaminated Soils and Sediments in Southern Drainage and Floodplain or Wetlands of Lawless Creek - Established geometric mean of the NOAEL and LOAEL, the site-specific cleanup level for zinc in soils and sediments in the wetland area as 148.6 mg/kg.	**July 2011**
Public Notice for the Public Comment Period Initiated for Proposed ROD Amendment - Published in Danville Register & Bee	**August 12, 2013**
EPA's Public Meeting for Draft ROD Amendment held in Blairs, VA - Remediation of Zinc Contaminated Soils and Sediments in Southern Drainage and floodplain or Wetlands of Lawless Creek.	**September 5, 2013**
EPA signed the ROD Amendment for the Remediation of Zinc Contaminated Sediments in Southern Drainage and Soils and Sediments of the Floodplain or Wetland Area of Lawless Creek.	**September 23, 2014**
Fourth Five Year Review Report.	**February 2015**

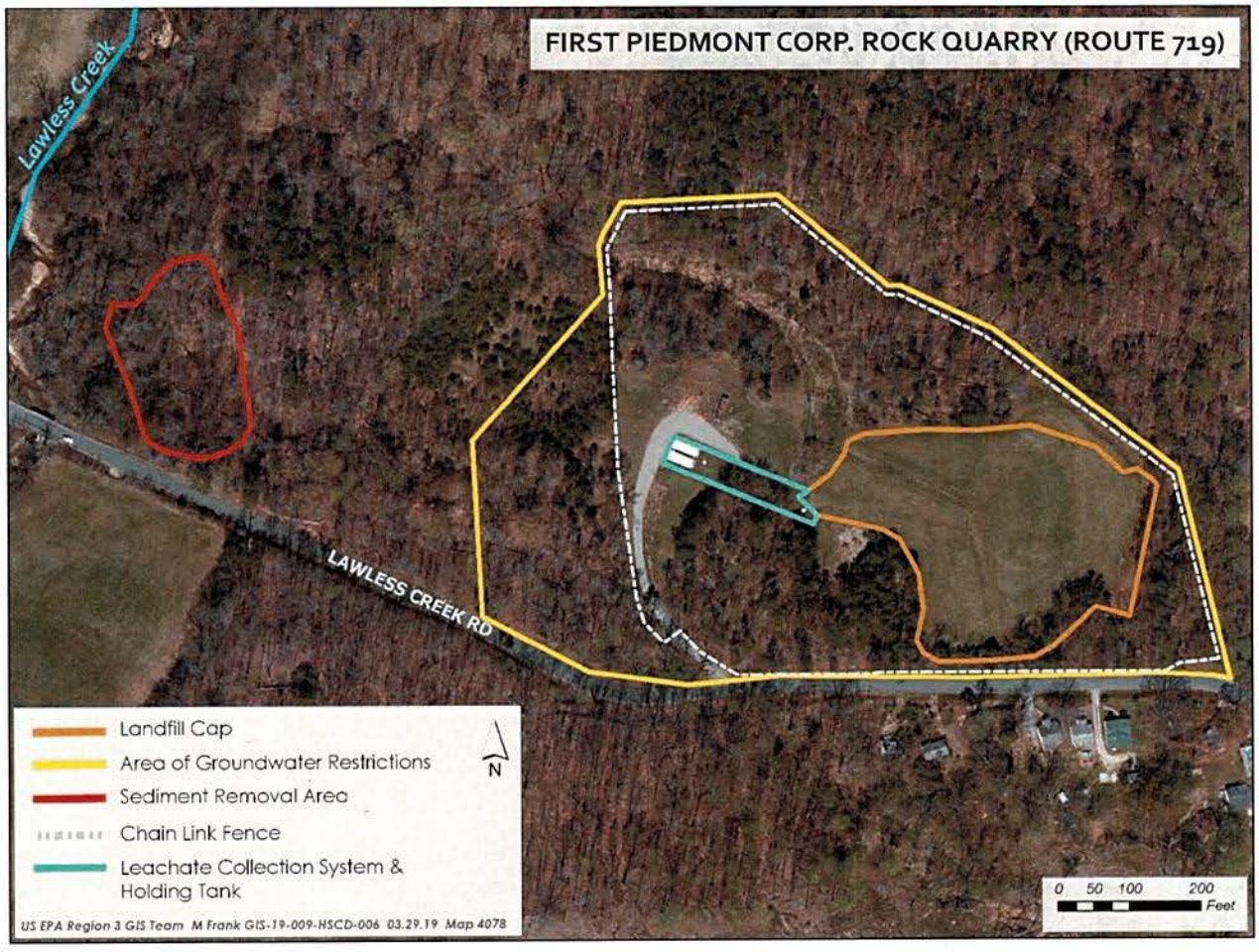
Event	Date
Second Amendment to Administrative Order issued by EPA. Order requires PRPs to submit a Remedial Design and Remedial Action Workplan for zinc-impacted soils of the Lawless Creek Floodplain within 30 days of the June 11, 2015, effective date of the Order.	**May 12, 2015**
PRPs submit a Remedial Design and Remedial Action Work Plan Addendum for zinc-impacted soils of the Lawless Creek Floodplain to EPA.	**July 31, 2015**
Comment letter from EPA regarding the Remedial Design and Remedial Action Work Plan Addendum for the zinc-impacted soils in the Lawless Creek Floodplain Area.	**December 14, 2015**
PRPs submit a Response to Comments letter to EPA following the December 14, 2015 EPA letter regarding the Remedial Action Work Plan Addendum for the zinc-impacted soils in the Lawless Creek Floodplain Area. The PRPs submit the revised Remedial Design and Remedial Action Work Plan Addendum as an attachment to this letter.	**February 1, 2016**
EPA issues letter approving the February 2, 2016 Remedial Design and Remedial Action Work Plan Addendum.	**July 20, 2016**
Former Lawless Creek Floodplain Area remedial action and restoration activities initiated. The excavation and restoration activities were completed between August 14, 2017 and November 20, 2017.	**August 14, 2017**
EPA concurs that institutional controls for former Lawless Creek Floodplain Area are not required based on clean-closure meeting site-specific action levels.	**October 5, 2017**
Removal Action Completion Report for Zinc Impacted Soils in the Lawless Creek Floodplain submitted to EPA.	**February 23, 2018**
Remedial action for zinc-impacted soils in the Lawless Creek Floodplain Area is completed with the purchase of wetland mitigation credits to offset project-related wetland impacts.	**July 6, 2018**
Updated Remedial Action Completion Report for Zinc Impacted Soils in the Lawless Creek Floodplain submitted to EPA.	**July 10, 2018**
EPA and VDEQ conducted site visit to confirm that the work outlined in the Remedial Design and Remedial Action Work Plan Addendum (February 2016) and documented in the Remedial Action Completion Report for Zinc Impacted Soils in the Lawless Creek Floodplain was completed as required.	**October 18, 2018**

Event	Date
A Universal Environmental Covenant Act (UECA) covenant for First Piedmont was signed and recorded with Pittsylvania County.	**November 2, 2018**
EPA issues letter concluding that the soil and sediment remedial activities for the Lawless Creek Floodplain were performed in accordance with the Remedial Design and Remedial Action Work Plan Addendum (February 2016).	**December 13, 2018**
EPA issued the Final Close-Out Report.	**January 9, 2020**

APPENDIX C – SITE MAPS

Figure C-1: First Piedmont Site Map





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Pittsylvania County, Virginia

Figure C-2: First Piedmont Remedial Areas Site Map

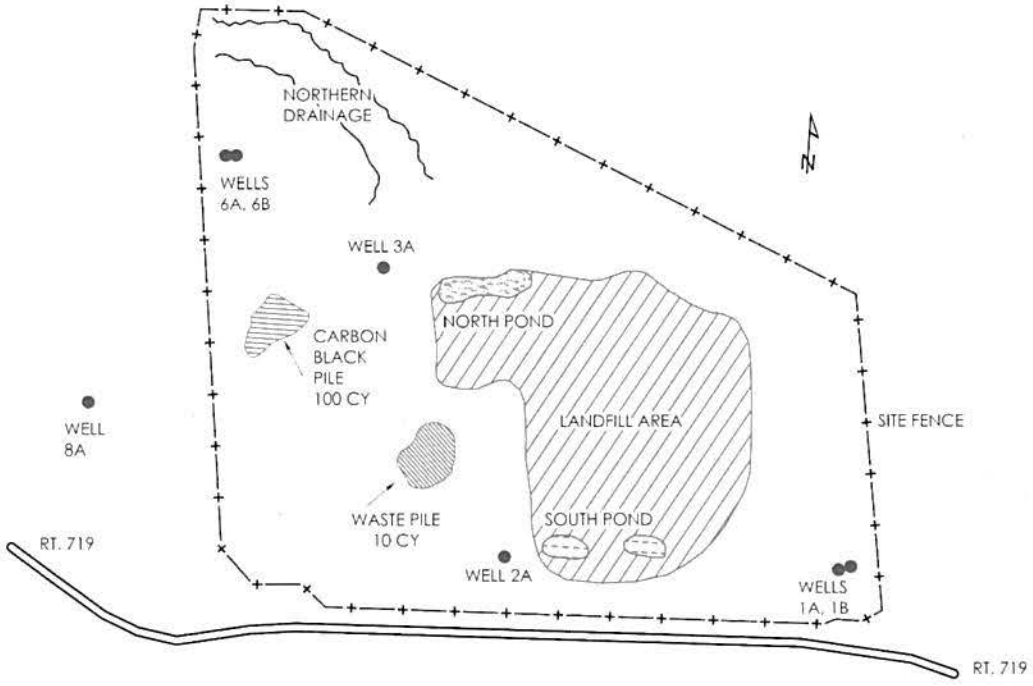
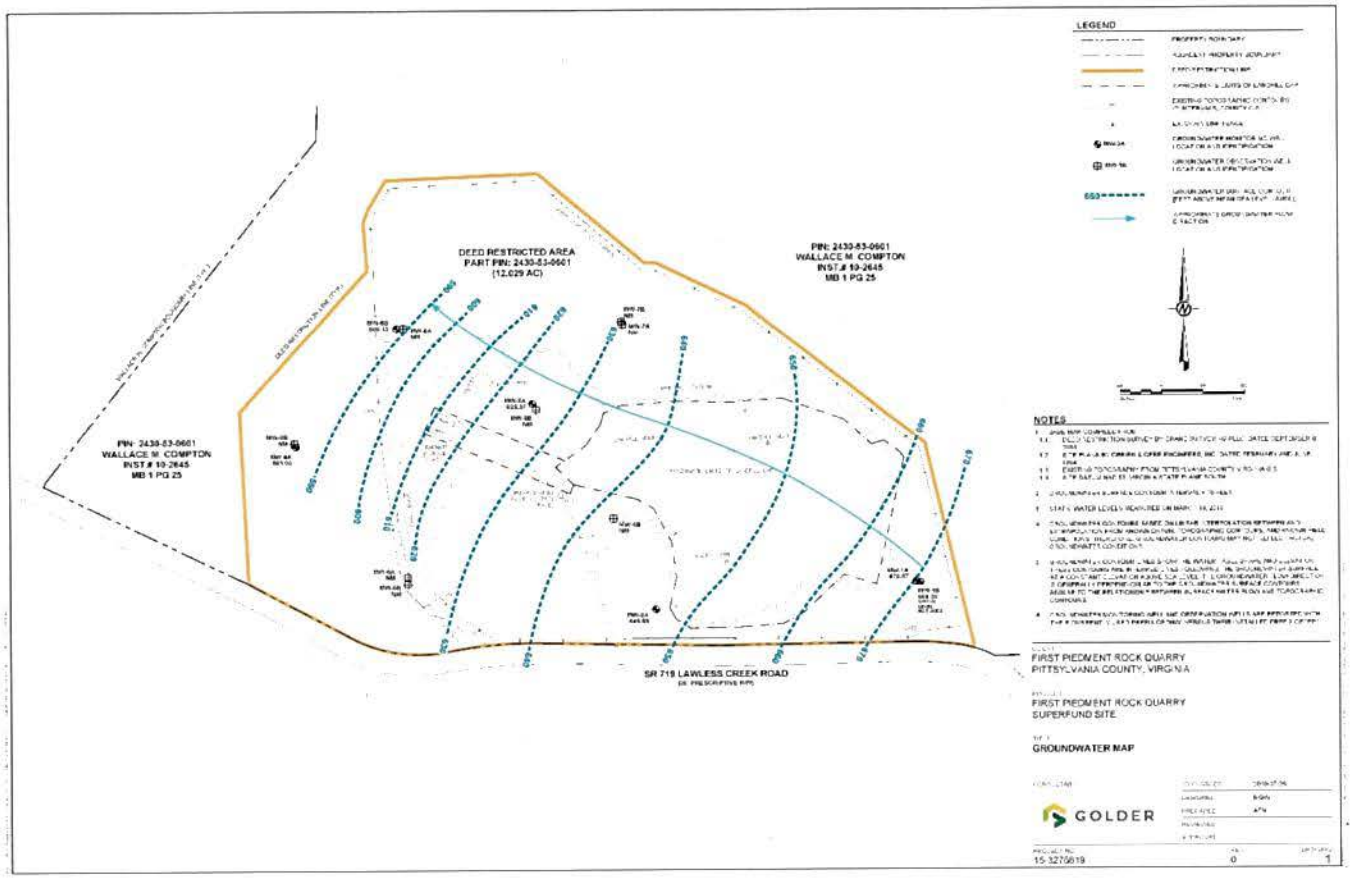


Figure C-3: Groundwater Table Map



APPENDIX D – SITE INSPECTION PHOTOS

Photo 1: Northward View of Landfill from Southern Toe

Photo 2: Leachate Collection System

Photo 3: Monitoring Wells

Photo 4: Restored Zinc Sediment Excavation Area, Looking North

APPENDIX E – PRESS NOTICE

EPA REVIEWS CLEANUP

First Piedmont Rock Quarry Superfund Site

The U.S. Environmental Protection Agency (EPA) is conducting its fifth FYR of the First Piedmont Rock Quarry Superfund Site located along route 719 in Pittsylvania County, Va., EPA inspects sites regularly to ensure that cleanups conducted remain fully protective of public health and the environment. EPA's most recent Five Year Review of this site was conducted in 2015. This review determined that while the remedy is protective of human health in the short-term. The remedy was not found to be to be protective of human health in the long- term because institutional controls need to be implemented to protect the integrity of the remedy and prevent exposure to contaminated soil and groundwater. The remedy was also not protective of the environment in the long-term, because the zinc contaminated soils and sediments in the Lawless Creek Wetlands area and the Southern Drainage area have not been cleaned up.

Detailed results of this review and the Agency recommendations will be made available in February 2020.

To access results of the review (starting February 2020):
http://epa.gov/5yr

To read detailed site and contact information:
https://www.epa.gov/superfund/firstpiedmont

To ask questions or provide site information:

Contact: Megan Keegan **Phone**: 215-814-5536

Email: keegan.megan@epa.gov

Protecting public health and the environment