

**UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION,	:	
	:	
	:	
Plaintiff,	:	CIVIL ACTION
v.	:	No. 08-cv-6010
	:	
WHITTAKER CORPORATION, JOHNSON MATTHEY INC., MARCEGAGLIA USA, INC., and CHRISTIANA METALS CORPORATION,	:	
	:	
Defendants.	:	
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WHITTAKER CORPORATION and JOHNSON MATTHEY INC.,	:	
	:	
Third-Party Plaintiffs,	:	
v.	:	
	:	
CONSTITUTION DRIVE PARTNERS, L.P.,	:	
	:	
Third-Party Defendant.	:	

CONSENT DECREE
BETWEEN PLAINTIFF COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND
DEFENDANTS WHITTAKER CORPORATION, JOHNSON MATTHEY INC.,
MARCEGAGLIA USA, INC., AND CONSTITUTION DRIVE PARTNERS, L.P.

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CONSENT DECREE
BETWEEN PLAINTIFF COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND
DEFENDANTS WHITTAKER CORPORATION, JOHNSON MATTHEY INC.,
MARCEGAGLIA USA, INC., AND CONSTITUTION DRIVE PARTNERS, L.P.

This Consent Decree is entered into this 6th day of March, 2026, by and between Plaintiff Commonwealth of Pennsylvania, Department of Environmental Protection (“Department”), Defendant Whittaker Corporation (“Whittaker”), Defendant Johnson Matthey Inc. (“JMI”), Defendant Marcegaglia USA, Inc. (“Marcegaglia”), and Third-Party Defendant Constitution Drive Partners, L.P. (“CDP”), (each Defendant and Third Party Defendant identified individually as “Settlor” and collectively as “Settlers”). The Department and Settlers (collectively, “the Parties”) agree as set forth herein:

INTRODUCTION

A. The Department is the agency with the duty and authority to administer and enforce the Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756, No. 108, 35 P.S. § 6020.101 *et seq.* (“HSCA”); the Solid Waste Management Act, Act of July 7, 1980, P.L. 380, as amended, 35 P.S. § 6018.101 *et seq.* (“Solid Waste Management Act”); the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1 *et seq.* (“Clean Streams Law”); the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §§ 9601-9675 (“CERCLA”); and administer and implement the Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1995, P.L. 4, No. 1995-2, 35 P.S. Section 6026.101 *et seq.* (“Act 2”); and the Uniform Environmental Covenants Act, the Act of December 18, 2007, P.L. 450, No. 68, *as amended*, 27 Pa. C.S. § 6501 *et seq.* (“UECA”); and Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 (“Administrative Code”); and the rules and regulations promulgated thereunder (“Regulations”).

B. Whittaker is a corporation, qualified to do business in Pennsylvania, with a business address of 1955 N. Surveyor Avenue, Simi Valley, CA 93063 and is a “person,” as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

C. JMI is a corporation, registered to do business in Pennsylvania, with a business address of 435 Devon Park Drive, Suite 600, Wayne, PA 19087 and is a “person,” as defined in Section 103 of HSCA, 35 P.S. §6020.103, and Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

D. Marcegaglia is a corporation, registered to do business in Pennsylvania, with a registered business address of 1001 East Waterfront Drive, Munhall, PA 15120 and is a “person,” as defined in Section 103 of HSCA, 35 P.S. §6020.103, and Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

E. CDP is a limited partnership, registered to do business in Pennsylvania, with a registered business address of 2201 Renaissance Boulevard, Suite 4104, King of Prussia, PA 19406 and is a “person,” as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and Section 101(21) of CERCLA, 42 U.S.C. § 9601(21). CDP’s General Partner is Constitution Drive Partners Acquisition Corporation, a corporation, registered to do business in Pennsylvania, with a registered business address of 2201 Renaissance Boulevard, Suite 4104, King of Prussia, PA 19406 and is a “person,” as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

F. The Bishop Tube HSCA Site is a site, as defined in Section 103 of HSCA, 35 P.S. §6020.103 (“Site”). The Site includes the source property, located in East Whiteland Township, Chester County, Pennsylvania, with an address of 1 South Malin Road, Malvern, Pennsylvania and Tax Parcel ID No. 42-4-321.2, which comprises the 13.7-acre parcel where manufacturing occurred from the 1950s through the 1990s (“Source Property”), and the soil, groundwater, and surface water at and near the Source Property where hazardous substances and/or contaminants that were released from the Source Property have come to be located. See Appendix A, a true and correct copy of a Site map. As provided in the definition of a “site” in Section 103 of HSCA, 35 P.S. §6020.103, the Site includes all areas where the hazardous substances and/or contaminants from the Source Property have come to be located.

G. The Source Property was owned by the following entities for the time frames as noted:

1954 -1967	J. Bishop and Company Platinum Works (n/k/a Johnson Matthey Inc.)
1967- 3/31/1969	Matthey Bishop, Inc. (n/k/a Johnson Matthey Inc.)
4/1/1969 -1/7/1974	Bishop Tube Co., a subsidiary of Whittaker Corporation
1/7/1974 -2005	Central and Western Chester County Industrial Development Authority (equitable owner)
1974 -2004	Christiana Metals Corporation, d/b/a Bishop Tube Co. (equitable owner)
2005 – Present	Constitution Drive Partners, L.P.

H. Operations at the Source Property were conducted by the following entities for the time frames as noted:

6/1951-1967	J. Bishop and Company Platinum Works (n/k/a Johnson Matthey Inc.)
1967- 3/31/1969	Matthey Bishop, Inc. (n/k/a Johnson Matthey Inc.)
4/1/1969 -1/7/1974	Bishop Tube Co., a subsidiary of Whittaker Corporation.
1/7/1974 -12/1/1989	Christiana Metals Corporation, d/b/a Bishop Tube Co.
12/1/1989 - 9/22/1991	Electralloy Steel Corporation (Alloy Steel), d/b/a Bishop Tube Co.
9/23/1991- 4/1/1999	Marcegaglia USA, Inc.
1991-1993	The New Bishop Tube, a subsidiary of Marcegaglia S.p.A. (n/k/a Marcegaglia USA, Inc.)
1993-1999	Damascus Bishop Tube, a subsidiary of Marcegaglia S.p.A. (n/k/a Marcegaglia USA, Inc.)

I. The manufacture and processing of metal alloy tubes and other products occurred at the Source Property from about 1951 until 1999. During certain periods of operations, these processes included acid treatment and degreasing of the tubing. Substances were employed in these processes that now are defined as “hazardous substances,” pursuant to 40 CFR § 302.4. Specifically, nitric and hydrofluoric acids were used to prepare and remove impurities from stainless steel tubes for lubrication and redrawing after annealing, which involved using heat to increase the hardness and durability of the stainless steel. These substances were stored in raw and waste form at the Source Property, and there were instances when these substances were released to the environment. In addition, Chlorinated Volatile Organic Compounds (“CVOCs”), including trichloroethene (“TCE”), were used in vapor degreasers and distillation units. These substances were stored in drums prior to 1975 and, beginning in 1975, in a 4,000 gallon above-ground storage tank (“AST”) connected to the degreaser units via a piping system. There were instances when soils at the Source Property were disturbed and moved.

J. From April 1969 to the early 1980s, the Pennsylvania Department of Health and, later, the Department conducted investigations at the Site and they contend that their investigations showed unpermitted discharges at or near the Source Property, including to the septic system, cesspools, surface waters, and soils, of process fluids containing contaminants and that the sewage added pollutants, including metals, solids, increased acidity and biological oxygen demand to surface waters. Commonwealth inspectors conducted no sampling of groundwater or soils or any analysis for CVOCs during this time period. JMI and Whittaker contend that, to the extent such conditions occurred, neither of them caused such conditions.

K. In 1981, the Department requested that Christiana Metals Corporation (“Christiana”) conduct an investigation into possible contamination of groundwater at the Site. In 1981, the Department detected fluoride, heavy metals, and other contaminants in a non-contact cooling water stream discharge at the Site. In 1981, 1987, 1989, and 1995, Christiana installed monitoring wells at the Site as part of a voluntary site characterization. Groundwater was the source of the cooling water, and monitoring well sampling revealed concentrations of fluoride, heavy metals, and other contaminants in groundwater at levels in excess of current applicable Act 2 residential Statewide health standards.

L. In June 1984, NUS Corporation performed a site inspection at the Source Property on behalf of the United States Environmental Protection Agency (“EPA”). The investigation included the sampling of four monitoring wells that were installed in 1981, as part of a hydrogeologic study conducted at the Source Property by Betz, Converse, Murdock Inc. on behalf of Christiana. TCE concentrations, ranging from 4,800 - 20,120 micrograms per liter (“µg/l”) or parts per billion (“ppb”), were found in three of the four monitoring wells. TCE was also found in a stormwater swale at 2,026 ppb. Other contaminants detected in the monitoring wells and the swale include 1,1,1-TCA, 1,1-dichloroethane (“1,1-DCA”), 1,1-dichloroethene (“1,1-DCE”), trans-dichloroethylene (“trans-1,2-DCE”), and tetrachloroethene (“PCE”).

M. In September 1991, Marcegaglia, S.p.A. purchased machinery and equipment from Christiana under a bill of sale and assignment agreement, and, under a September 23, 1991 right of use agreement and, later, a 1993 lease arrangement with Christiana, the New Bishop Tube Company renovated and retrofitted the facility, including disturbance and relocation of soils at the Source Property, and resumed operations of the facility for tube fabrication that

Marcegaglia contends did not include degreasing of the tubing or acid treatment. While initiating operation of the facility, Marcegaglia arranged for removal of the 4,000-gallon AST in July 1992 and later arranged for disposal of drums, including drums containing waste materials found in a drum storage area of the Source Property between 1994-1995. In 1993, records show that Marcegaglia purchased one 55-gallon drum of TCE, which Marcegaglia contends it used only a small portion of in its operations for a few weeks. Marcegaglia further contends that Marcegaglia, and the above-described circumstances and/or activities, did not cause or contribute to the release of hazardous substances and/or contamination at the Site.

N. In 1994, a break in a water line caused tens of thousands of gallons of public water to flood inside and around Plant 8 on the Source Property. Marcegaglia contends that the water line break did not cause or contribute to releases of hazardous substances and/or contamination at the Site, and in any event, was beyond Marcegaglia's control. The New Bishop Tube Company later changed its name to Damascus-Bishop Tube Company. Christiana continued its investigation activities after operations transitioned to Marcegaglia.

O. In 1999, at the request of the Department, Christiana installed a point of entry treatment system on the water supply of a contaminated home well, which contained TCE at a concentration of 53 µg/l at that time.

P. In 1999, Marcegaglia ceased operations at the Source Property, and, at the same time, Christiana informed the Department that voluntary actions to investigate and remediate the Site would cease. At this time, Christiana abandoned the Source Property.

Q. In March 2000, the Department signed the Response Justification Document for the Site. The Department hired a general technical assistance contractor, Baker Environmental Inc. ("Baker"), to perform site investigations, utilizing a phased approach. Between 2000 and 2008, Baker's activities revealed the following:

- Three soil areas contained elevated concentrations of CVOCs, located in the vicinity of (i) Vapor Degreaser in Plant 8, the 4000-gallon AST and underground pipeline used for transporting solvent to that degreaser; (ii) a building used to store waste drums referred to as the ARMCO building in some reports; and (iii) Vapor Degreaser in Plant 5 at the Source Property;
- The Source Property groundwater contained TCE and other CVOCs in deep and shallow aquifers;
- Evidence of CVOC dense non-aqueous phase liquid ("DNAPL") in groundwater on the Source Property;
- A diffuse discharge of contaminated groundwater from the Source Property to a tributary to Little Valley Creek;
- Confirmed off-site migration of contaminated groundwater; and
- The full extent of the contamination was not known.

R. The Source Property is currently owned by CDP, who purchased it from the Central and Western Chester County Industrial Development Authority in 2005, with the intention of redeveloping the property for commercial/light industrial use. In March 2005, CDP and the Department entered into a Prospective Purchase Agreement (“PPA”) Consent Order and Agreement to advance the cleanup of the Site for commercial/light industrial use. In 2014, East Whiteland Township rezoned the Source Property for residential use at the request of CDP. CDP subsequently pursued Township approval of a residential development.

S. Under the terms of the PPA, which the Department and CDP executed prior to the recordation of the deed transfer of the Source Property to CDP, CDP agreed, among other things, to (1) assess and clean up soil contamination at the Source Property to a non-residential Statewide health standard or a site-specific standard, in accordance with a work plan created by CDP; (2) not to exacerbate any existing contamination at the Source Property; (3) not to interfere with or impair any response actions taken by the Department; and (4) provide access and right of entry to the Department for potential response actions in exchange, in part, for a covenant not to sue and contribution protection from the Department. By letter dated January 28, 2014, the Department advised CDP that the covenant not to sue in the PPA was voided. CDP disputes that the Department voided the covenant not to sue in the PPA.

T. In 2006, the Department selected a Prompt Interim Response of installing an air sparging and soil vapor extraction remedial system (“AS/SVE System”) to address TCE contaminated soil in three source areas in the unsaturated zone on the Source Property. The Department issued a Statement of Decision for the Prompt Interim Response in September 2007. In 2007, CDP designed and provided mechanical equipment for the installation and operation of the AS/SVE System. The Department’s contractor (Weston Solutions) completed installation in October 2007. CDP undertook the AS/SVE System performance demonstration from February 2008 to April 2008. While the AS/SVE System removed some contaminants of concern (“COCs”), primarily VOCs, it failed to meet the performance requirements established by the first amendment to the PPA, which was subsequently voided by the PA Environmental Hearing Board in 2019, which decision was upheld by the Commonwealth Court in 2021.

U. On August 18, 2008, the Department and JMI entered into a Consent Order and Agreement (“CO&A”) for the performance of a remedial investigation and, if necessary, a feasibility study for the Site. On August 4, 2009, the Department, JMI, and Whittaker amended the CO&A to include Whittaker. Since 2008, initially JMI and then JMI and Whittaker performed the required remedial investigations and feasibility study, in connection with which JMI and Whittaker contend that they incurred costs of approximately \$6,198,368.92.

V. On July 27, 2011, the Department approved a June 14, 2011 document, titled “Final Report” for the Source Property, pursuant to Act 2. This Report documented a March 16, 2011 release of PCB Aroclor 1254 and 1260 to the soils at the Source Property, caused by vandals, and the subsequent cleanup and demonstration of attainment by CDP of the residential Statewide health standard in soil for PCBs in accordance with Act 2.

W. In March 2016, the Department investigated a complaint regarding earth moving activities at the Source Property. The Department reported the incident to CDP and to the Chester County Conservation District. Upon further investigation the Department determined

that soil had been imported to the Source Property from an unknown location without the required analysis or clean fill certification by a former development partner of CDP, which CDP contends was done without CDP's knowledge. Follow-up inspection of the Source Property in April 2016 confirmed that the imported soil had been removed.

X. Initially from 2008 on behalf of JMI, and then from 2009 to 2020, on behalf of JMI and Whittaker, Roux Associates Inc. ("Roux") performed a multi-phased Remedial Investigation ("RI"), including a Treatability Study ("TS"), as well as a Feasibility Study ("FS"), for groundwater contamination at the Source Property. On January 13, 2021, the Department received an updated RI Report and the FS submitted by Roux on behalf of JMI and Whittaker, in accordance with Paragraph T of the CO&A. On February 22, 2021, the Department notified Roux, JMI, and Whittaker that it considered the RI Report and FS to be final and it accepted them for placement in the administrative record for the Site developed pursuant to Section 506 of HSCA, 35 P.S. § 6020.506 ("Administrative Record"). Appendix B, hereto, is a true and correct copy of the Administrative Record docket.

Y. In August 2020, Groundwater and Environmental Services, Inc. ("GES"), on behalf of the Department, prepared a Remedial Alternatives Analysis ("2020 RAA") for unsaturated soils. GES supplemented the 2020 RAA with a November 2020 Technical Memorandum ("2020 Tech Memo") to evaluate technologies capable of simultaneously addressing contaminated unsaturated and saturated soils on the Source Property.

Z. In March 2022, Roux, on behalf of JMI and Whittaker, collected samples from the surface water and groundwater on the Source Property for the polyfluoroalkyl substances ("PFAS") including, perfluorooctane sulfonate ("PFOS") and Perfluorooctanoic acid ("PFOA"). PFOA was detected at concentrations ranging from 2.58 parts per trillion ("ppt") to 142 ppt. PFOS were detected at concentrations ranging from 0.103 ppt to 0.804 ppt. The Settlers deny that they caused or contributed to the release of any such substances at the Source Property.

AA. Pursuant to Section 501(a) of HSCA, 35 P.S. § 6020.501(a), the Department conducted investigations to define the nature and extent of any release or threatened release of hazardous substances and/or contaminants at the Site. CVOCs and inorganic hazardous substances and/or contaminants have been detected in soil, groundwater, and surface water in excess of applicable Act 2 residential and non-residential Statewide health standards. Reports of these investigations are included within the Administrative Record. The Administrative Record is the record upon which the Department has based its selection of the remedial response actions for the Site ("Remedial Action"), as more fully defined at Paragraph BB.

BB. "Remedial Action" shall mean all of the actions taken or to be taken at the Site, pursuant to the Statement of Decision ("SOD") (as defined in Paragraph GG, below) and any amendments thereto, relating to the release and threatened release from the Source Property of hazardous substances and/or contaminants identified and addressed in the SOD or any amendment thereto, which actions include investigations of responsible persons, investigations of conditions at the Site, the cleanup actions at the Source Property, and maintenance of those actions, in accordance with the definition of "response" set forth Section 103 of HSCA, 35 P.S. §6020.103.

CC. The past and present conditions at the Site, identified in the investigation reports compiled in the Administrative Record, demonstrate that a release and/or threatened release of hazardous substances and/or contaminants has occurred at the Site, as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and a release and/or disposal of hazardous substances and/or contaminants has occurred at the Site, as defined in Section 101(2) of CERCLA, 42 U.S.C. § 9601(22). The Department contends, but the Settlers deny, that a release or threatened release is continuing to occur at the Source Property.

DD. Pursuant to Section 501(a) of HSCA, 35 P.S. § 6020.501(a), the Department has determined that a response is necessary to abate the release or threatened release of hazardous substances and/or contaminants, identified in Paragraphs I through N, V, W, Z, AA and CC, above.

EE. The Site was placed on the Pennsylvania Priorities List for remedial action by publication in the *Pennsylvania Bulletin* on September 11, 2010, pursuant to Section 502 of HSCA, 35 P.S. § 6020.502.

FF. Pursuant to Section 506 of HSCA, 35 P.S. §6020.506, the Department published notice of the proposed Remedial Action for the Site on September 25, 2021 in the *Pennsylvania Bulletin* and, on September 25, 2021, in the *Daily Local News*, a major local newspaper of general circulation. Copies of those notices are included within the Administrative Record. See Appendix B.

GG. The selection of the Remedial Action to be implemented at the Site is documented in the SOD, filed by the Department into the Administrative Record on September 21, 2022, pursuant to Sections 505(a) and 506(e) of HSCA, 35 P.S. §§ 6020.505(a) and 6020.506(e), and/or in any modification to or replacement of the SOD, including through a reopening of the Administrative Record. The SOD includes the Department's explanation for any significant differences between the final Remedial Action selected and the proposed Remedial Action referred to in the preceding Paragraph. The Department's selected Remedial Action includes In Situ Chemical Oxidation/In Situ Chemical Reduction ("ISCO/ISCR"), coupled with soil mixing in select areas of concern to address unsaturated and saturated soils impacted by Site COCs ("Operable Unit 1 ("OU1")); In Situ Injection of ISCO/ISCR or bioremediation amendments in the two primary source areas to address contaminated groundwater ("OU2"); and connection of one nearby residence with an impacted private well to the existing public water line ("OU3"). The Department also filed a response to public comments submitted into the Administrative Record. A true and correct copy of the SOD is incorporated into this Consent Decree by reference and is attached, hereto, as Appendix C, with the understanding that Settlers are not admitting its allegations.

HH. JMI and Whittaker prepared an "Operable Unit 3 Workplan for Water Line," dated January 6, 2023 ("OU3 Workplan"), to implement the remedy set forth in the SOD for OU3. The OU3 Workplan was accepted by the Department on January 10, 2023 and was implemented by Roux on behalf of JMI and Whittaker in May 2023. On February 19, 2024, Roux, on behalf of JMI and Whittaker, provided final implementation cost backup information related to the implementation of OU3. The revised final cost to implement the OU3 remedy was \$106,651.49, which the Department has accepted.

II. In August 2025, the Department tasked a General Technical Assistance Contractor to perform a data gap pre-design investigation (“Data Gap Pre-Design Investigation”) to address the following data gaps: Northeast corner evaluation; PFAS evaluation; fluoride soil evaluation; and background soil evaluation. After completion of the Data Gap Pre-Design Investigation, on behalf of the Department, the contractor will prepare a Data Gap Pre-Design Investigation Report.

JJ. The Department has alleged that certain Settlers are potentially responsible persons in accordance with Section 701 of HSCA, 35 P.S. § 6020.701, and Section 107 of CERCLA, 42 U.S.C. § 9607, with respect to the release or threat of release of hazardous substances and/or contaminants, referred to in Paragraphs I through N, V, W, Z, AA and CC, above. The Settlers have denied that they are responsible persons with regard to such releases or threats of releases.

KK. The Department has determined that the release and/or threatened release of hazardous substances and/or contaminants, referenced in the preceding Paragraph, constitutes a statutory public nuisance under Section 1101 of HSCA, 35 P.S. § 6020.1101.

LL. From May 19, 2000 through April 30, 2022, the Department incurred \$4,233,483 in response costs expended in connection with the Site. The Department has continued and will continue to incur recoverable response costs from May 1, 2022 onward.

MM. The Department initiated a complaint in 2009 in the above-captioned action (“the Litigation”) in the United States District Court for the Eastern District of Pennsylvania (“the Court”) against Whittaker, alleging it was liable, as a responsible person, to the Commonwealth for its response costs under Section 107 of CERCLA, 42 U.S.C. § 9607, and Sections 507, 701, and 1101 of HSCA, 35 P.S. §§ 6020.507, 6020.701, and 6020.1101. In 2010, the Department amended the complaint to join JMI. The Department amended again in 2017 to join Marcegaglia and Christiana in the Litigation, alleging that Marcegaglia and Christiana were liable, as responsible persons, to the Commonwealth for its response costs under Section 107 of CERCLA, 42 U.S.C. §9607, and Sections 507, 701, and 1101 of HSCA, 35 P.S. §§ 6020.507, 6020.701, and 6020.1101. Various defendants filed third party complaints against CDP in 2018, asserting claims against CDP for contribution and indemnification under HSCA and CERCLA and at common law, and filed cross claims against certain defendants. CDP filed counterclaims against the third-party plaintiffs. Whittaker, JMI, CDP and Marcegaglia have denied liability for the claims asserted by the Department. Although served by the Department with the Summons and Amended Complaint, and with crossclaims by JMI and Whittaker, Christiana has not appeared or participated in the Litigation. On August 21, 2023, Judge Mitchell S. Goldberg of the Court entered a default judgment against Christiana, declaring Christiana to be a responsible person for the release and threatened releases of hazardous substances and/or contaminants at the Site and finding Christiana jointly and severally liable for all damages caused by such releases and/or threatened releases and costs recoverable by the Department.

NN. “Department’s Response Costs” shall mean all of the direct and indirect costs that the Department has incurred and will incur for response actions at the Site and costs that will be incurred to undertake the Remedial Action pursuant to the SOD, whether completed before or after the entry of this Consent Decree, which costs include employee costs; reasonable attorneys’

fees; contractor costs; sampling costs; laboratory costs; and oversight costs and accrued interest; in accordance with the definition of “response” as defined in Section 103 of HSCA, 35 P.S. § 6020.103.

OO. “Settlors’ Response Costs” shall mean the direct and indirect costs that the responsible persons under the direction of the Department have incurred and will incur for response actions at the Site and costs that will be incurred to undertake the Remedial Action pursuant to the SOD, and any amendment thereto, whether completed before or after the entry of this Consent Decree, which costs include, but are not limited to, contractor costs; sampling costs; and laboratory costs, in accordance with the definition of “response” as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and in accordance with “other reasonable and necessary or appropriate costs of response incurred by any other person,” as set forth in Section 702(a)(3) of HSCA, 35 P.S. § 6020.702(a)(3). However, Settlers’ Response Costs shall not include overhead costs, costs from communications by or to a Settlor attorney, costs to review any Settlor attorney work product, or any fees or costs of a Settlor attorney except for attorneys’ fees and costs directly incurred in connection with negotiating/drafting access agreements and addressing access disputes, as set forth in Paragraph 56, below.

PP. The Parties desire to resolve the foregoing matters and all claims relating to the Settlers, including, but not limited to, any remaining obligations or liability under the 2005 PPA, without resorting to further litigation, either as part of the pending Litigation or otherwise. After extensive negotiation, and in an effort to minimize litigation, the Department and Settlers, without admission of fault or liability, have agreed to enter into this Consent Decree. By approving this Consent Decree, the Court finds that settlement of the Department’s claims against Settlers, and the settlement of the claims by each Settlor against each and every other Settlor, furthers the public interest by minimizing prolonged and complicated litigation, and also that the Consent Decree is fair, reasonable, equitable and consistent with public policy, as manifested in HSCA and CERCLA.

NOW THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED:

JURISDICTION

1. The Court has jurisdiction over the subject matter of the Litigation and the Parties hereto pursuant to Sections 107 and 113(b) of CERCLA, 42 U.S.C. §§ 9607 and 9613(b), and 28 U.S.C. §§ 1331 and 1367. This Court also has personal jurisdiction over Settlers. Venue is proper in this Court. For purposes of this Consent Decree, Settlers waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settlers shall not challenge the terms of this Consent Decree or this Court’s jurisdiction to enter and enforce this Consent Decree.

PARTIES BOUND AND EFFECT OF CONSENT DECREE

2. This Consent Decree constitutes an Order of the Court and is binding upon the Department and Settlers, their agents, successors, and assigns.

3. Each Settlor's agreement to the entry of this Consent Decree and/or the actions undertaken in accordance with this Consent Decree do not constitute, nor shall they be construed as, an admission of liability, wrongdoing, or misconduct on the part of any Settlor, its officers, employees, or representatives. This Consent Decree, as well as any discussions or communications relating to this Consent Decree, shall not be offered or received into evidence in any action or proceeding, as an admission of liability, wrongdoing, responsibility or misconduct on the part of any Settlor, its officers, employees, or representatives.

4. Nothing in this Consent Decree shall constitute or be construed as a release or covenant not to sue regarding any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or equity, which the Department or Settlers have against any person that is not a Party to this Consent Decree or a Party's insurer in its capacity as such. The Department and Settlers expressly reserve the right to sue or continue to sue any person that is not a Party to this Consent Decree or expressly included in the releases and covenants not to sue in this Consent Decree.

CERTIFICATIONS REGARDING RECORDS

5. By signing this Consent Decree, each Party certifies, to the best of its knowledge and belief, that it:

(a) Has made reasonable inquiry about and has not located or identified any non-privileged information that it has not already provided to the other Parties in discovery in the Litigation, which the Party believes relates in any way to its ownership and/or operation of the Source Property, and/or the generation, treatment, transportation, storage, or disposal of hazardous substances and/or contaminants, including the amount and toxicity of such hazardous substances and/or contaminants, at or in connection with the Site; and

(b) Has not intentionally altered, mutilated, discarded, destroyed, or otherwise disposed of any records, documents, or other information relating to its potential liability, regarding the Site since the Department's notification to it of potential liability or the filing of a suit against it relating to the Site.

SETTLOR WORK PARTY

6. The Settlor Work Party is CDP, which has agreed to perform certain aspects of the Remedial Action in accordance with the SOD (see Appendix C) and any amendments thereto or replacements thereof pursuant to Paragraph 42 ("Amended SOD"), and pursuant to this Consent Decree. CDP shall be entitled to have the Qualified Settlement Trust, as defined in Paragraphs 82 through 85 (entitled "Assurance of Performance") (the "Trust") pay its reasonable and necessary or appropriate costs that it incurs in connection with the planning for, implementation of, and administration of the Remedial Action that it performs (or causes to be performed) at the direction or approval of the Department in the manner set forth in this Consent Decree and the Trust documents.

SEQUENCING OF REMEDIAL ACTION

7. The anticipated sequencing of activities to implement a comprehensive and integrated soil and groundwater remedy is as follows:

(a) Prepare a combined Preliminary Institutional Control/Engineering Control (“IC/EC”) and OU1 Remedial Design Investigation (“RDI”) Work Plan (“WP”) and implement the work defined in this Preliminary IC/EC RDI WP to:

- i. evaluate requisite information/data to determine the approach and sequencing for implementation of ICs/ECs (see Paragraph 8) consistent with the SOD; and
- ii. conduct an OU1 Soils Remedial Design Investigation (“RDI”) to collect requisite treatability and pilot test data to scope and design the OU1 Remedial Action for soils (see Paragraphs 15 to 22).

(b) Prepare an OU1 Soils Remedial Design (“RD”), including a Basis of Design (“BOD”), 90% RD, and 100% RD for the OU1 Remedial Action for soils (see Paragraphs 15 to 22);

(c) Implement and document the OU1 Remedial Action for soils (see Paragraphs 15 to 22);

(d) Prepare an OU1 Soils Final Report (see Paragraph 22);

(e) Prepare an OU2 Groundwater RDI WP and implement the work defined in the OU2 Groundwater RDI WP to collect requisite treatability and pilot test data to scope and design the injection components of the OU2 Remedial Action for groundwater (see Paragraphs 24 to 37);

(f) Prepare an OU2 Groundwater RD, including a BOD, 90% RD, and 100% RD for the OU2 Remedial Action for groundwater (see Paragraphs 24 to 37);

(g) Implement and document the OU2 Remedial Action for groundwater (see Paragraphs 24 to 37); and

(h) Complete and submit a Final Report and Post Remedial Care Plan or Declaration of Inability to Complete the Remedial Action Report (see Paragraphs 49 through 53).

PRELIMINARY IC/EC & OU1 REMEDIAL DESIGN INVESTIGATION

8. The portion of the RDI WP to address Preliminary ICs/ECs is anticipated to address the following subjects:

- (a) Establishing and maintaining requisite ICs;
- (b) Establishing and maintaining ECs, to the extent that the ECs can be implemented without being damaged by subsequent remediation or redevelopment of the Source Property;
- (c) Establishing a groundwater monitoring program inclusive of data evaluation and reporting;
- (d) Implementing surface water best management practices (“SW BMPs”), to the extent that the SW BMPs can be implemented without being damaged by subsequent remediation of the Source Property; and
- (e) Based on the approach and sequencing of the ICs/ECs as defined in the Preliminary IC/EC RDI WP, some aspects of the IC/EC work may be implemented as part of execution of the Preliminary IC/EC RDI WP and these components should be documented in the Preliminary IC/EC RDI Report (see Paragraph 14, below). Other aspects of the IC/EC work may be incorporated into the OU2 Groundwater RDI WP (see Paragraph 24), the OU1 Soils or OU2 Groundwater 90% RDs, which include updated engineering and institutional control plans (see Paragraphs 17 and 31, respectively), the OU1 Soils or OU2 Groundwater 100% RDs which include final engineering and institutional control plans (see Paragraphs 19 and 34, respectively), or the Post Remedial Care Plan (see Paragraph 49).

9. Within seven (7) calendar days¹ of the effective date of this Consent Decree, as described in Paragraph 129 (entitled “Effective Date”), CDP shall submit to the Department, for review and approval, a Preliminary IC/EC RDI WP (see Paragraph 8).

10. The Preliminary IC/EC RDI WP shall include:

- (a) a Health and Safety Plan (“HASP”) for any field activities, which plan shall conform to the applicable requirements of 29 CFR §1910.120;
- (b) a Sampling and Analysis Plan (“SAP”) and a Quality Assurance Project Plan (“QAPP”) for any field sampling activities, prepared in accordance with Paragraphs 44 through 46;
- (c) a cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and
- (d) a schedule for implementation (each component of the schedule shall include an estimated start date and an estimated duration for completion.).

¹ Whenever the deadline by which an action is required under this Consent Decree falls on a Saturday, Sunday, federal holiday or state holiday, the deadline shall be the next business day.

11. Within sixty (60) calendar days of receipt of the Preliminary IC/EC RDI WP, the Department shall review the Preliminary IC/EC RDI WP in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”).

12. Upon approval by the Department, the Preliminary IC/EC RDI WP shall be incorporated into and enforceable under this Consent Decree. Any sustained dispute over the modification of any of the submissions made by CDP, pursuant to this Paragraph, shall be addressed under the dispute resolution procedures described in Paragraphs 103 through 105 (entitled “Dispute Resolution Procedures”).

13. Upon receipt of the Department’s written approval of the Preliminary IC/EC RDI WP, CDP shall initiate the work, consistent with the approved schedule contained in the plan. CDP shall complete the work outlined in the approved plan within one hundred (100) calendar days. Any substantial modifications made during implementation of the Preliminary IC/EC RDI WP shall be first reviewed and approved by the Department to the extent feasible. If prior approval is not feasible, as may be the case for a field modification, the change shall be reported to the Department within two (2) business days. In either situation, any substantial modifications shall be reported to the Department in Progress Reports required to contain this information pursuant to Paragraphs 64 and 65.

14. Within thirty (30) calendar days of completion of the work outlined in the Department-approved Preliminary IC/EC RDI WP, CDP shall report the results to the Department by preparing and submitting to the Department a Preliminary IC/EC RDI Report, coupled with the OU1 Soils BOD (i.e., 30% design), that presents a summary of findings along with recommendations for addressing any additional data gaps that may be necessary during the Remedial Design Investigation phases. This Preliminary IC/EC RDI Report shall also report the results of completed IC/EC activities and describe the approach and sequencing of the ICs/ECs to be completed in subsequent phases of the work.

OU1 SOILS REMEDIAL ACTION

15. The OU1 Soils BOD (i.e., 30% design) shall include, but not necessarily be limited to, a preliminary design submittal containing, as applicable:

(a) an in situ amendment alternatives analysis, which includes, as applicable, results of treatability studies and/or bench scale study evaluations and may refer to technical publications, studies and experience from other sites, and/or laboratory studies;

(b) design criteria including project description; design requirements and provisions; preliminary process flow diagrams, as applicable; and operation & maintenance requirements;

(c) basis of design description including justification of design assumptions; a project delivery strategy; a Remedial Action compliance plan for federal permits, off-site

permits, and Applicable, or Relevant and Appropriate Requirements (“ARARs”) compliance; and a preliminary assessment of off-source property access requirements;

(d) preliminary drawings and specifications, including an outline of general specifications; and preliminary schematics and drawings;

(e) a value engineering screen;

(f) a cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and

(g) a preliminary Remedial Action schedule.

16. Within eighty (80) calendar days of receipt of the Preliminary IC/EC RDI Report, coupled with the OU1 Soils BOD, the Department shall review the Preliminary IC/EC RDI Report in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”) and provide written comments to CDP on the OU1 Soils BOD.

17. Within sixty (60) calendar days of receipt of the Department’s approval of the Preliminary IC/EC RDI Report and written comments on the OU1 Soils BOD, CDP shall submit to the Department, for review and comment, the OU1 Soils 90% RD which shall address the Department’s comments on the BOD and shall include, as applicable, those components listed in 90% RD - General Provisions, (Paragraph 38), below.

18. Within one hundred ten (110) calendar days of receipt of the OU1 Soils 90% RD, the Department shall review and provide written comments to CDP on the OU1 Soils 90% RD.

19. Within thirty (30) calendar days of receipt of the Department’s written comments on the OU1 Soils 90% RD, CDP shall submit to the Department, for review and approval, the OU1 Soils 100% RD, which shall address the Department’s comments on the 90% RD and shall include, as applicable, those components listed in 100% RD - General Provisions, (Paragraph 39), below.

20. Within forty-five (45) calendar days of receipt of the OU1 Soils 100% RD, the Department shall review the OU1 Soils 100% RD in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”).

21. After approval of the OU1 Soils 100% RD by the Department, CDP shall implement and complete the work outlined in the OU1 Soils 100% RD within ninety (90) calendar days and in accordance with that plan. CDP shall submit to the Department for review and approval any additional plans and deliverables required under the approved OU1 Soils 100% RD in accordance with the approved schedule in the OU1 Soils 100% RD. Any revisions to the RD for the OU1 Soils Remedial Action shall be approved by the Department in writing.

22. Within thirty (30) calendar days of CDP's completion of activities set forth in the OU1 Soils 100% RD, CDP shall submit to the Department for review and approval an OU1 Soils Final Report. The report shall demonstrate that the Remedial Action has been implemented in accordance with the SOD and the OU1 Soils 100% RD. The report shall also include:

- (a) documentation of authorized disposal, including final manifests and disposal certificates for waste generated throughout the OU1 Soils Remedial Action; and
- (b) as built drawings, specifications, and operations/monitoring and maintenance ("OM&M") plans for engineering controls implemented.

23. Within eighty (80) calendar days of receipt of the OU1 Soils Final Report, the Department shall review the OU1 Soils Final Report, subject to and in accordance with Paragraph 63 and the submittal approval procedures described in Paragraphs 66 through 74 (entitled "Submittal Approvals").

OU2 GROUNDWATER REMEDIAL ACTION

24. Within thirty (30) calendar days of receipt of the Department's written approval of the OU1 Soils Final Report, CDP shall submit to the Department, for review and approval, OU2 Groundwater RDI WP for OU2 Groundwater Remedial Action. The OU2 Groundwater RDI WP shall include:

- (a) additional supplementary RDI activities recommended in the Data Gap Pre-Design Investigation Report, referenced in Paragraph II;
- (b) plans for necessary treatability studies and/or bench scale study evaluations;
- (c) an updated HASP for any field activities, which plan shall conform to the applicable requirements of 29 CFR §1910.120;
- (d) an updated SAP and a QAPP for any field sampling activities, prepared in accordance with Paragraphs 44 through 46;
- (e) a cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and
- (f) a schedule for implementation.

25. Within sixty (60) calendar days of receipt of the OU2 Groundwater RDI WP, the Department shall review the OU2 Groundwater RDI WP in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled "Submittal Approvals").

26. Upon approval by the Department, the OU2 Groundwater RDI WP shall be incorporated into and enforceable under this Consent Decree. Any sustained dispute over the modification of any of the submissions made by CDP, pursuant to this Paragraph, shall be addressed under the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105.

27. Upon receipt of the Department's written approval of the OU2 Groundwater RDI WP, CDP shall initiate the work, consistent with the approved schedule contained in the plan. CDP shall complete the work outlined in the plan within forty-five (45) calendar days. Any modifications made during implementation of the OU2 Groundwater RDI WP shall be first submitted by CDP to the Department and reviewed and approved by the Department to the extent feasible. If prior approval is not feasible, as may be the case for a field modification, CDP shall report the change to the Department within two (2) business days. In either situation, any substantial modifications shall be reported to the Department in Progress Reports required to contain this information pursuant to Paragraphs 64 and 65.

28. Within sixty (60) calendar days of the completion of the work outlined in the Department-approved OU2 Groundwater RDI WP, CDP shall report the results to the Department by preparing an OU2 Groundwater RDI Report that presents the results from completion of the Department-approved OU2 Groundwater RDI work.

29. Within thirty (30) calendar days of its submittal of the OU2 Groundwater RDI Report, CDP shall submit to the Department the OU2 Groundwater BOD (i.e., 30% design) for the implementation of the OU2 Groundwater Remedial Action which shall include, but not necessarily be limited to, a preliminary design submittal containing, as applicable:

(a) an in situ amendment alternatives analysis, which includes, as applicable, results of treatability studies and/or bench scale study evaluations and may refer to technical publications, studies and experience from other sites, and/or laboratory studies;

(b) design criteria including project description; design requirements and provisions; preliminary process flow diagrams, as applicable; and operation & maintenance requirements;

(c) basis of design description including justification of design assumptions; a project delivery strategy; a Remedial Action compliance plan for federal permits, for off-site permits and ARARs compliance; and a preliminary assessment of off-source property access requirements;

(d) preliminary drawings and specifications including an outline of general specifications; and preliminary schematics and drawings;

(e) a value engineering screen;

(f) a cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by

cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and

(g) a preliminary Remedial Action schedule.

30. Within sixty (60) calendar days of receipt of the OU2 Groundwater BOD, the Department shall review the OU2 Groundwater RDI Report in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”) and provide written comments on the OU2 Groundwater BOD.

31. Within ninety (90) calendar days of receipt of the Department’s written comments on the OU2 Groundwater BOD, CDP shall submit to the Department, for review and comment, the OU2 Groundwater 90% RD.

32. The OU2 Groundwater 90% RD shall address the Department’s comments on the OU2 Groundwater BOD and shall include, as applicable, those components listed in 90% RD - General Provisions, (Paragraph 38), below.

33. Within one hundred twenty (120) calendar days of receipt of the OU2 Groundwater 90% RD, the Department shall review and provide written comments on the OU2 Groundwater 90% RD.

34. Within thirty (30) calendar days of receipt of the Department’s written comments on the OU2 Groundwater 90% RD, CDP shall submit to the Department, for review and approval, the OU2 Groundwater 100% RD. The OU2 Groundwater 100% RD shall address the Department’s comments on the OU2 Groundwater 90% RD and shall include, as applicable, those components listed in 100% RD - General Provisions, (Paragraph 39), below.

35. Within forty-five (45) calendar days of receipt of the OU2 Groundwater 100% RD, the Department shall review the OU2 Groundwater 100% RD in accordance with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”).

36. After approval of the OU2 Groundwater 100% RD by the Department, CDP shall implement the OU2 Groundwater 100% RD in accordance with that plan. CDP shall submit to the Department for review and approval any additional plans and deliverables required under the approved OU2 Groundwater 100% RD in accordance with the approved schedule in the OU2 Groundwater 100% RD. Any revisions to the OU2 Groundwater 100% RD shall be approved by the Department in writing. CDP shall complete the work outlined in the OU2 Groundwater 100% RD within one hundred twenty (120) calendar days. Within sixty (60) calendar days of CDP’s completion of activities set forth in the OU2 Groundwater 100% RD, CDP shall submit to the Department for review and approval a Final Report and Post Remedial Care Plan in accordance with provisions described in Paragraph 49, below.

37. Within ninety (90) calendar days of receipt of the Final Report and Post Remedial Care Plan, the Department shall review the Final Report and Post Remedial Care Plan in

accordance with provisions described in Paragraph 50, below, and the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”).

90% RD - GENERAL PROVISIONS

38. The 90% RD shall include, as applicable, the following:
- (a) revised design criteria, as necessary;
 - (b) a revised basis of design description, as necessary;
 - (c) an updated Remedial Action compliance plan including any required permit applications or information required to meet substantive ARARs requirements identified in the basis of design description;
 - (d) a value engineering study report, as needed;
 - (e) a revised Remedial Action schedule;
 - (f) a Remedial Action contingency plan;
 - (g) a Remedial Action HASP;
 - (h) an updated engineering and institutional control plan;
 - (i) a Remedial Action decontamination plan;
 - (j) a Remedial Action waste management plan;
 - (k) a performance monitoring and demonstration plan;
 - (l) an operation & maintenance plan;
 - (m) a long-term monitoring plan;
 - (n) a cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and
 - (o) a Remedial Action SAP and QAPP.

100% RD - GENERAL PROVISIONS

39. The 100% RD shall include, as applicable, the following:
- (a) final design criteria, as necessary;
 - (b) a final basis of design description, as necessary;
 - (c) a final Remedial Action compliance plan including any required permit applications or information required to meet substantive ARARs requirements identified in the basis of design description
 - (d) a final value engineering study report, as necessary;
 - (e) a final Remedial Action schedule;
 - (f) a final Remedial Action contingency plan;
 - (g) a final Remedial Action HASP;
 - (h) a final engineering and institutional control plan;
 - (i) a final Remedial Action decontamination plan;
 - (j) a final Remedial Action waste management plan;
 - (k) a final performance monitoring and demonstration plan;
 - (l) a final operation & maintenance plan;
 - (m) a final long-term monitoring plan;
 - (n) a final Remedial Action SAP and QAPP;
 - (o) a final cost estimate, which breaks costs down by task (i.e., Project Management, Report Preparation/Data Evaluation, Soil Sampling, etc.) and further by cost type (i.e., Labor, Equipment Rental, Materials, Expenses, Subcontractor Cost, etc.); and
 - (p) final drawings and specifications.

REMEDIAL ACTION - GENERAL PROVISIONS

40. Upon Department approval, final 100% RDs shall be enforceable under this Consent Decree, and CDP shall implement the activities as required under the RDs, subject to limitations stated, herein, including at Paragraphs 40 through 85. CDP shall not conduct the Remedial Action at the Site prior to written approval by the Department. Any revisions to the RDs shall be approved in writing by the Department.

41. CDP shall use best efforts to achieve the remedial action objectives as set forth in the SOD or any Amended SOD. The Remedial Action performed by CDP in accordance with any final 100% RD, and in accordance with the financial limitations on the ability to perform activities set forth in Paragraphs 40 through 85, below, shall be deemed to be satisfactory to meet the remedial action objectives as set forth in the SOD or any Amended SOD and to have satisfied the obligations of CDP to perform or implement such Remedial Action.

42. In the event a reason exists to modify or replace the Response Action selected in the SOD, described in Paragraph GG, the Department may reopen the Administrative Record, pursuant to Section 506(g) of HSCA and Section 3.33 of the Administrative Regulations, 25 Pa. Code § 3.33, as follows:

- (a) The Department shall publish a notice in the *Pennsylvania Bulletin* and the *Daily Local News* of its proposed modification or replacement of the SOD;
- (b) A public comment period will extend for a minimum of 60-days from the date the notice of reopening is published in the *Pennsylvania Bulletin*, and the Department will schedule a public hearing; and
- (c) After the public comment period ends, the Department will:
 - i. respond to any significant comments received;
 - ii. file a response to public comment document and a statement of the basis and purpose of the Department's decision regarding the Response Action, including whether a modification or replacement SOD is warranted and reflecting any change to the Response Action; and
- (d) The Department will close the reopened Administrative Record after all items from any reopening have been included in it.

Within 30 days of the modification or replacement of the SOD, CDP shall submit to the Department a BOD for the modified remedial response actions. CDP and the Department shall then follow the schedule for document submittals and review in accordance with the OU1 Soils Remedial Action Section (Paragraphs 15 through 23) and/or the OU2 Groundwater Remedial Action Section (Paragraphs 24 through 37). Any reopening of the Administrative Record pursuant to this Paragraph shall in no way effect or alter the Settlers' respective financial obligations under this Consent Decree as set forth in Paragraphs 82 and 86.

43. In the event the Department determines, or CDP proposes, that remedial response actions ("Additional Remedial Actions") in addition to the Remedial Actions set forth in the Department-approved final 100% RD for OU1 and OU2 are reasonably necessary to meet CDP's obligations under Paragraph 40, above, the Department or CDP shall provide written notification of such determination to the Project Coordinator of the other Party in accordance with Paragraph 75. Any dispute between the Department and CDP over the need for such Additional Remedial Actions shall be resolved in accordance with the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105. CDP shall not be required to perform any Additional Remedial Actions unless there are sufficient funds remaining within the Trust to pay the full costs for such work.

QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

44. CDP shall use quality assurance, quality control and chain of custody procedures for all treatability, design, compliance, and monitoring samples in accordance with the “EPA Requirements for Quality Assurance Project Plans,” March 2001 (EPA QA/R-5), “Data Quality Objectives Process for Superfund, Interim Final Guidance,” September 1993 (EPA540-R-93-071. PB94-963203); “Guidance for Data Quality Assessment, Practical Methods for Data Analysis,” July 2000 (EPA QA/G9: QA00); “EPA NEIC Policies and Procedures Manual,” May 1978, revised November 1984, (EPA 330/9-78-001-R); and subsequent amendments to such guidelines upon notification by the Department.

45. Prior to the commencement of any sampling under this Consent Decree, CDP shall submit to the Department for review and approval a SAP and QAPP that is consistent with the applicable work plan and the applicable guidance, referenced in the preceding Paragraph.

46. CDP shall use environmental laboratories accredited in accordance with 25 Pa. Code Chapter 252 (Environmental Laboratory Accreditation) to analyze all samples according to EPA approved methodologies.

47. CDP shall notify the Department not less than thirty (30) calendar days in advance of any sample collection activity under this Consent Decree, unless shorter notice is agreed to in advance by the Department or is reasonably required under the circumstances. Upon request by the Department, CDP shall allow split or duplicate samples to be collected by the Department or its authorized representatives. In addition, the Department shall have the right to collect any additional samples that the Department deems necessary. The Department may allow CDP to collect split or duplicate samples of any samples it collects as part of the Department’s oversight of CDP’s work under this Consent Decree.

48. Within seven (7) calendar days of receipt, CDP shall submit to the Department electronic copies of the laboratory reports of all sampling or tests obtained or generated by or on behalf of CDP with respect to the Site or the implementation of this Consent Decree.

FINAL REPORT AND POST REMEDIAL CARE PLAN

49. Within sixty (60) calendar days of CDP’s completion of activities set forth in the OU2 Groundwater 100% RD, CDP shall submit to the Department for review and approval a Final Report and Post Remedial Care Plan. The report shall demonstrate that the Remedial Action has been implemented in accordance with the SOD or any Amended SOD. The report shall include documentation of authorized disposal, including final manifests and disposal certificates for waste generated throughout the Remedial Action, and the Post Remedial Care Plan shall comply with the Department’s Land Recycling Program Technical Guidance Manual (“TGM”).

50. Within ninety (90) calendar days of its receipt of the Final Report and Post Remedial Care Plan, the Department shall comply with the submittal approval procedures described in Paragraphs 66 through 74 (entitled “Submittal Approvals”) and respond as follows:

(a) If, after review of the Final Report and Post Remedial Care Plan, submitted by CDP pursuant to Paragraph 49, above, the Department determines that the Remedial Action has not been completed in accordance with this Consent Decree, the Department will notify CDP in writing of the activities that must be undertaken to complete the implementation of the Remedial Action in accordance with the SOD or any Amended SOD, and will include in that notice a schedule for performance of those activities, or require CDP to submit a schedule to the Department for review and approval. To the extent that sufficient funds remain in the Trust, and subject to limitations stated, herein, including at Paragraphs 40 through 85, CDP shall perform all of the activities described in the Department's notice or request dispute resolution in accordance with the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105.

(b) If, after review of the Final Report and Post Remedial Care Plan submitted by CDP pursuant to Paragraph 49 the Department determines that the Remedial Action has been fully performed in accordance with this Consent Decree, and that the Remedial Action was implemented in accordance with the SOD or any Amended SOD, the Department shall provide to CDP a written certification of the Remedial Action completion for the purposes of this Consent Decree. This certification shall not affect CDP's obligations under this Consent Decree, except as stated by the Department in the certification.

DECLARATION OF INABILITY TO COMPLETE THE REMEDIAL ACTION DUE TO LACK OF FINANCIAL SECURITY

51. In the event it is anticipated that funds in the Trust will be depleted before the Remedial Action for OU1 and/or OU2 will have been fully performed, CDP shall submit a written Declaration of Inability to Complete the Remedial Action report to the Department which requests a certification of completion of the Remedial Action. The report shall demonstrate that the Remedial Action has been implemented in accordance with the SOD or any Amended SOD, subject to limitations stated herein including at Paragraphs 40 through 85, and that funds in the Trust will be depleted before the Remedial Action has been fully performed. The report shall document Remedial Action activities which were successfully completed, include documentation of authorized disposal, including final manifests and disposal certificates for waste generated throughout the Remedial Action, and list outstanding activities that will be necessary to complete the Remedial Action.

52. If, after review of the written report submitted by CDP pursuant to Paragraph 49, above, the Department determines that the Remedial Action has not been completed in accordance with this Consent Decree and that sufficient funds remain in the Trust or may be added to the Trust in no more than eighteen (18) months to conduct additional response actions, the Department will notify CDP in writing of the activities that must be undertaken to complete the implementation of the Remedial Action in accordance with the SOD or any Amended SOD and, if necessary, with a modified schedule to allow for replenishment of funds in the Trust, and will include in that notice a schedule for performance of those activities, or require CDP to submit a schedule to the Department for review and approval. To the extent that sufficient funds remain in the Trust or may be added to the Trust in no more than eighteen (18) months, and

subject to limitations stated herein including at Paragraphs 40 through 85, CDP shall perform all of the activities described in the Department's notice or request dispute resolution in accordance with the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105, but in no event shall CDP be required to perform any further Remedial Action activities unless there are sufficient funds actually on deposit in the Trust to cover the anticipated remaining cost of the specific Remedial Action activities required for performance by CDP, pursuant to the Consent Decree and/or approved work plans.

53. If, after review of the written report submitted by CDP, pursuant to Paragraph 49, the Department determines that the Remedial Action has been implemented in accordance with the SOD or any Amended SOD, subject to limitations stated herein including at Paragraphs 40 through 85, and that not all Remedial Action called for by the SOD or any Amended SOD have been completed because there are insufficient funds remaining in the Trust or may be added into the Trust in no more than eighteen (18) months, to implement all such remaining Remedial Action, the Department shall provide to CDP a Statement of No Further Remedial Action Obligations under this Consent Decree. After issuance by the Department of a Statement of No Further Remedial Obligations, the Trust will terminate, and any remaining funds in the Trust will be paid to the Department, after payment by the Trust of outstanding invoices. A refusal by the Department to issue a Statement of No Further Action under this provision shall be subject to the Dispute Resolution Procedures set forth in Paragraphs 103 through 105.

ACCESS AND PROPERTY USE RESTRICTIONS

54. For as long as it retains an ownership interest in the Source Property, CDP, for itself and all principals, affiliates, agents, successors, assigns, and possessors of the Source Property, grants the Department and the Department's designated agents, including contractors, subcontractors, and responsible persons under the direction of the Department, access to and entry upon the Source Property and any other property owned by CDP necessary to perform response actions at and related to the Source Property. CDP shall use its best efforts to assist and cooperate with the Department to obtain access agreements and/or easements or otherwise gain access to any properties owned by principals or affiliates of CDP necessary to perform response actions at or related to the Source Property. Nothing in this Paragraph is intended to limit in any way the right of access or entry that the Department may otherwise have by operation of law. For as long as it retains an ownership interest in the Source Property, CDP, for itself and all principals, affiliates, agents, successors, assigns and possessors of the Source Property under control by or agreement with CDP, agrees that the Department and its representatives, including contractors and subcontractors, shall have access at all times to the areas owned by CDP, where activities are being performed pursuant to this Consent Decree, for any of the following purposes, or for other purposes set forth under HSCA or CERCLA:

- (a) monitoring the progress of activities taking place;
- (b) verifying any data or information submitted to the Department;
- (c) conducting investigations relating to contamination at or near the Source Property;

(d) obtaining samples at the Source Property and other properties described above;

(e) inspecting and copying records, operating logs, contracts, or other documents required to assess CDP's compliance with this Consent Decree;

(f) performing any Remedial Action consistent with or required under this Consent Decree and the SOD;

(g) performing any interim or emergency response as determined to be necessary by the Department or CDP; and

(h) performing any other actions or activities included in any approved Work Plan or Plan or amendment or supplement thereto under this Consent Decree, to the extent that such actions or activities reasonably require access to the Source Property or other property subject to this Paragraph.

55. Nothing in the preceding Paragraph is intended to limit in any way the right of entry or inspection that the Commonwealth of Pennsylvania, its agencies, or departments may otherwise have by operation of any law.

56. CDP will use reasonable efforts to obtain all known, necessary access agreements to all properties (other than the Source Property and other properties subject to Paragraph 54, above) where the Remedial Action under this Consent Decree is required, in accordance with the schedule contained in the Department-approved work plans or RDs requiring such access for its implementation. Within thirty (30) calendar days of the date the Department approves a work plan that indicates that access to additional properties is needed due to new information uncovered, or if CDP determines that access is necessary during implementation of the Remedial Action required under this Consent Decree, CDP shall use reasonable efforts to obtain the necessary access agreement(s) or easement(s) to enter upon such properties. Site access agreements shall provide reasonable access to the Department, and/or CDP, as may be appropriate, and its contractors and representatives. All costs and fees directly incurred by CDP, related to access to all properties (other than the Source Property and other properties, subject to Paragraph 54, above), including, but not limited to, attorneys' fees and legal costs incurred to obtain the necessary access agreements or easement(s), shall be paid by the Trust.

57. CDP shall notify the Department within fifteen (15) calendar days of obtaining each necessary access agreement. In the event that CDP has not obtained the necessary access agreements as required under the preceding Paragraph, CDP shall notify the Department within seven (7) calendar days from the expiration of the required time period regarding both the inability to obtain access and use of reasonable efforts to obtain such agreements.

58. If CDP demonstrates to the Department's satisfaction that it has used its reasonable efforts to obtain access, but has been unsuccessful, then the Department may take all appropriate action to obtain necessary access. In the event that the Department does not act to acquire such access or the Department is unable to acquire such access, then CDP shall not be

required to perform the Remedial Action for which such access was required unless the Department and CDP are able to reasonably modify the activities or location to allow performance to occur without such access, subject to the financial limitations on the ability to perform activities set forth in Paragraphs 40 through 85.

59. Settlers and their agents, successors, assigns, and possessors of the Source Property shall not conduct any activity at the Source Property that would prevent, be inconsistent with, interfere, or disturb, the Remedial Action at the Source Property or at the Site.

60. Within fifteen (15) calendar days of the effective date of the Consent Decree, CDP shall provide the Environmental Covenant, attached hereto as Appendix E, executed by the Grantor and Grantee to the Department for signature by the Department.

61. Within thirty (30) calendar days of its receipt of the approved and executed Environmental Covenant by the Department, CDP shall record the Environmental Covenant against the deed of the Source Property, or any parts of the property, thereto, with the Recorder of Deeds of Chester County.

62. Within ninety (90) calendar days of execution of the Environmental Covenant by the Department, CDP shall provide the Department a certified copy of the original recorded Environmental Covenant showing the clerk's recording stamps.

63. The Department acknowledges that CDP is proposing future development of the Source Property for residential purposes. The Department does not oppose development activities that occur after the Department approves the OU1 Soils Final Report, pursuant to Paragraph 23, above, and CDP or another party may undertake development activities at the Source Property provided that the development activities are performed only after receipt of such Department approval and CDP and/or other parties have obtained all required approvals, permits, and/or authorizations necessary for such activities, and, except for the installation of roadways and the installation of a single utility line in each of the two groundwater areas of concern, as described in the SOD, referenced in Paragraph GG, the development activities will not occur in the two areas of concern for groundwater (or until after approval of the Final Report for OU2), and will not interfere, obstruct, or impede any remedial response activities at the Site, as described in the Environmental Covenant and Paragraph 60, above. Prior to the occupancy of any structures at the Source Property or any parts of the Source Property, CDP, for itself and all principals, affiliates, agents, successors and assigns, shall install (or require a third party to install) and confirm the proper operation of any engineering controls and any institutional control required in order to be protective of the health of occupants of the structures, which also shall be in accordance with the Environmental Covenant recorded on the deed of the Source Property or any parts of the Source Property. After installation of any such engineering controls and implementation of any institutional controls, CDP, for itself and all principals, affiliates, agents, successors, assigns and possessors of the Source Property or parts of the property, shall operate and maintain such engineering controls and implement such institutional controls at the Source Property or parts of the property during ownership of the Source Property or parts of the Source Property by CDP, its principals, affiliates, agents, successors or assigns.

REPORTING REQUIREMENTS

64. CDP shall submit electronic copies of Progress Reports to the Department and to East Whiteland Township containing the information in subparagraph (a) through (g), below, every month, unless a different period of time is required by the Department in writing, with each Progress Report to be submitted by the tenth (10th) calendar day of each month, following the effective date of this Consent Decree, until the Department has determined, pursuant to Paragraph 50(b) that the Remedial Action is complete or provides to CDP a Statement of No Further Remedial Action Obligations, pursuant to Paragraph 53. Each Progress Report shall:

- (a) describe the actions which have been undertaken toward achieving compliance with this Consent Decree during the previous month;
- (b) include a summary of all results of sampling and tests and all other data received or generated by CDP or its contractors or agents in the previous month to the extent that the results have been subject to completion of internal review in conformance with the SAP and QAPP;
- (c) identify all submittals required by this Consent Decree which were completed during the previous month;
- (d) identify waste material removed including, dates, hauler(s), type(s), quantity, and destination(s) during the previous month;
- (e) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next three months, and provide other information relating to the progress of design and implementation of the Remedial Action, including, as applicable, critical path diagrams or Gantt charts;
- (f) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Remedial Action required under this Consent Decree, and a description of efforts made to mitigate those delays or anticipated delays; and
- (g) include any modifications to the work plans or other schedules that CDP proposes to the Department.

65. CDP shall notify the Department of changes in the schedule in the latest Progress Report for the performance of any activity, as soon as possible, but no later than seven (7) calendar days prior to the scheduled date of performance of the activity or within such time frame as may be feasible under the circumstances.

SUBMITTAL APPROVALS

66. Any modifications of approved work plans or schedules proposed by CDP, pursuant to Paragraph 64(g), shall be subject to Department review and approval as set forth further in this section (Paragraphs 66 to 74).

67. After review of any submittal which is required to be approved by the Department pursuant to this Consent Decree, the Department shall, in writing, (a) approve the submittal in whole or in part; (b) approve the submittal upon specified conditions; (c) disapprove the submittal in whole or in part and modify the submittal to correct deficiencies; (d) disapprove the submittal in whole or in part, and direct CDP to modify the submittal; or (e) any combination of the above.

68. In the event of submittal approval by the Department pursuant to the preceding Paragraph, CDP shall undertake the action required by the submittal, as approved by the Department.

69. If the Department conditionally approves or modifies the submittal pursuant to Paragraph 67, CDP shall undertake the action as conditioned or modified by the Department or shall within thirty (30) calendar days request dispute resolution on the condition or modification in accordance with the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105. CDP shall proceed, at the direction of the Department, to undertake any activity required by any approved portion of a submittal, except to the extent that successful implementation of the approved portion of the submittal may be affected by the portion of the submittal subject to dispute resolution.

70. The Department reserves the right to take over the Remedial Action if CDP fails to resubmit an acceptable submittal, which shall be subject to the Dispute Resolution Procedures set forth in Paragraphs 103 through 105.

71. If the Department disapproves an initial or subsequent submittal and requires resubmissions, CDP shall within thirty (30) calendar days either (a) correct the deficiencies and resubmit the plan, report, or other item for approval, (b) submit a plan/schedule for addressing the deficiencies, or (c) request dispute resolution on the disapproval in accordance with the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105.

72. CDP shall be in violation of this Consent Decree, if any of the following circumstances occur, except that failure to comply with obligations shall not be enforceable when performance is not required, pursuant to the financial limitations stated, herein, including at Paragraphs 40 through 85:

(a) CDP fails to timely resubmit to the Department as required under Paragraph 71, above (when dispute resolution has not been requested);

(b) CDP fails to resubmit in a manner that reasonably responds to the deficiencies noted by the Department in its disapproval;

(c) CDP fails to comply in a timely manner with any obligations required under portions of a submittal that have been approved, except to the extent that successful implementation of the approved portion of the submittal may be affected by the portion of the submittal subject to dispute resolution; or

(d) CDP fails to comply in a timely manner with the final decision resolving the dispute pursuant to the Dispute Resolution Procedures as set forth in Paragraphs 103 through 105.

73. If the Department concludes that CDP is in violation of this Consent Decree pursuant to Paragraph 72, above, the Department will provide written notification about the violation to CDP and may request the imposition of civil penalties, pursuant to Paragraphs 97 through 99, below.

74. All submittals or portions thereof to the Department under this Consent Decree shall, upon approval or modification by the Department, be enforceable under this Consent Decree.

PROJECT COORDINATORS

75. Within seven (7) calendar days of the effective date of this Consent Decree, CDP and the Department shall notify each other, in writing, of the name, address, email, and telephone number of their respective Project Coordinators and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other party at least seven (7) calendar days before the change is made effective, unless impracticable, in which event the notice of the change should be made no later than the actual day the change is made. In the event that CDP decides to engage a different Project Coordinator, CDP's Project Coordinator shall have the technical expertise sufficient to adequately oversee all aspects of the Remedial Action required under this Consent Decree.

76. The Department's Project Coordinator and Alternate Project Coordinator shall have the authority to halt any Remedial Action required under this Consent Decree and to undertake any necessary Remedial Action when the Department's Project Coordinator or Alternate Project Coordinator determines that conditions at the Site constitute an emergency situation or may present an imminent threat to the public health or welfare or the environment due to a release or threatened release.

NOTICES AND SUBMISSIONS

77. Except for CDP's written statement relating to the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105, whenever, under the terms of this Consent Decree, written notice is required to be given or a submittal is required to be made, it shall be directed to the appropriate person, identified in Paragraphs 124 and/or 125, and as determined necessary by the party making the notice, with a copy to respective party's Project Coordinator(s), set forth in Paragraph 75, above.

78. CDP shall submit electronic copies of all submittals which are required to be reviewed and/or approved by the Department under the terms of this Consent Decree. All submittals and notices which are made under the terms of this Consent Decree shall be signed by an authorized representative of CDP, which may be the designated Project Coordinator.

79. In accordance with 25 Pa. Code § 250.12, submissions “containing information or analysis that constitutes professional geologic or engineering work as defined by the Engineer, Land Surveyor and Geologist Registration Law (63 P.S. §§ 148 - 158.2) must be sealed by a professional geologist or engineer who is in compliance with that statute.”

EMERGENCY RESPONSE

80. In the event of any action or occurrence during the performance of the Remedial Action which causes or threatens a release of hazardous substances and/or contaminants from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, CDP shall immediately take all appropriate actions to prevent, abate, or minimize such release or threat of release, and shall immediately notify the Department’s Project Coordinator, or if the Project Coordinator is unavailable, the Department’s Alternate Project Coordinator. If neither of these persons is available, CDP shall notify the Department’s Environmental Cleanup and Brownfields answering point (484) 250-5960 (during work hours) or (484) 250-5900 (after hours). CDP shall take such actions in consultation with the Department’s Project Coordinator or other available authorized Department officer and in accordance with all applicable provisions of the applicable HASP, the Site Contingency Plans, and any other applicable plans or documents developed pursuant to this Consent Decree. The costs incurred by CDP in connection with such emergency response action shall be paid by the Trust in accordance with the Trust Agreement (as defined in Paragraph 83, below), provided that the Department determines, upon review, that such costs are reasonable and necessary or appropriate to the Remedial Action, unless those emergency response costs are the result of intentional or negligent acts or omissions by CDP and its designated agents, including contractors and subcontractors. In the event that the estimated emergency response costs are not the result of intentional or negligent omissions by CDP or its designated agents, including contractors and subcontractors, and CDP concludes that the Trust does not contain sufficient funds to pay for such estimated emergency response actions, then CDP may invoke the request for a Statement of No Further Action under Paragraphs 51 through 53, above. In the event that CDP fails to take appropriate emergency response action as required by this Section, and the Department takes such action instead, the Trust shall reimburse the Commonwealth costs of the additional emergency response action, not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR § 300 *et seq.*, in addition to amounts specified in and in accordance with the procedures set forth in Paragraphs 86 through 91 (entitled “Payments by Settlers”).

81. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the Commonwealth to (a) take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of hazardous substances and/or contaminants on, at, or from the Site, or (b) direct or

order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of hazardous substances and/or contaminants on, at, or from the Site, subject to Paragraph 106 (entitled “Department’s Covenant Not to Sue”).

ASSURANCE OF PERFORMANCE

82. Pursuant to Paragraph 86, the Settlers shall submit to the Department financial security in the form of the Trust, within forty-five (45) calendar days of the effective date of this Consent Decree, which shall be created and operated pursuant to the qualified Settlement Trust Fund Agreement (“Trust Agreement”), attached hereto as Appendix D. The financial security, set forth below, which shall include the Settlers’ payments, set forth in Paragraph 86, below, the proceeds of any grants obtained pursuant to Paragraph 90, below, any additional money, obtained by the Department to provide sufficient funds, as set forth in Paragraph 52, above, and any proceeds recovered from Christiana or its insurer by the Department under Paragraph 100, below, shall be the sole source of funding for the Remedial Action under the SOD or any Amended SOD and this Consent Decree and the Settlers’ respective financial obligations shall be limited to the amounts set forth in Paragraph 86, below.

83. The Trust shall be established by the Settlers and the Trust Agreement shall be executed by the Settlers for the purpose of holding and disbursing monies for payments for the performance of work for Remedial Action in a timely manner and to fulfill other obligations as required under this Consent Decree, including payment of the Department’s Response Costs (past and future) in accordance with Paragraph 89, below, and certain future Response Costs incurred by CDP that the Department determines in advance are reasonable and necessary or appropriate to the Remedial Action and to the extent set forth in the Consent Decree and the Trust Agreement. Approval by the Department of cost estimates in the work plans and other submissions set forth in the following paragraphs in this section, shall constitute advance approval by the Department that the fees and costs incurred by CDP in accordance with those approved cost estimates are reasonable and/or appropriate to the Remedial Action, subject to final approval by the Department after its review of all detailed invoices substantiating that the cost were necessary, reasonable, and appropriate, the Consent Decree and the Trust Agreement: (i) Paragraphs 9 and 10 (“Preliminary IC/EC RDI WP”); (ii) Paragraphs 14 through 19 (“OU1 Soils RDs”); (iii) Paragraph 24 (“OU2 Groundwater RDI WP”); (iv) Paragraphs 29 through 37 (“OU2 Groundwater RDs”); and (v) Paragraphs 38 and 39 (“90% and 100% RDs”). Any change order or modified work plan and cost estimate will require review and preapproval by the Department. The Trust shall contain a starting balance of \$8,985,000, less the costs paid by JMI and Whittaker, and determined by the Department to be reasonable and necessary or appropriate cost, for implementation of the final remedy for OU3, which is equal to \$106,651.49, as set forth in Paragraph HH, above, and any amounts expended by CDP to implement the SOD or any Amended SOD, thereafter, starting on the effective date of the Consent Decree (including, but not limited to, building demolition, site preparation, and remedial design investigation costs incurred by CDP, pursuant to work plans approved by the Department that the Department determines are reasonable and necessary or appropriate to the Remedial Action), but nothing herein shall obligate CDP to perform any work to implement the SOD prior to the entry of this Consent Decree. The Trust shall also contain a financial assurance fund, as set forth in Paragraph 86. The Trust shall be established so the Department will collect all monies in the

event that a default of this Consent Decree occurs as determined pursuant to Paragraph 85, below, or the Consent Decree is terminated when there remain funds in the Trust, but the funds are insufficient to complete the Remedial Action to implement the SOD or any Amended SOD and the Department has issued a Statement of No Further Action, as set forth in Paragraph 53, above. The Department shall be the principal beneficiary of the Trust. The Trustee shall be an entity with authority to act as a Trustee and whose operations are regulated and examined by federal or state agencies. CDP shall be the primary Settlor responsible for securing the agreement with de maximis, inc. to be the Trustee to undertake the fiduciary work for the Trust set forth herein and in the Trust Agreement. The agreement, containing the details regarding the Qualified Settlement Fund (“QSF”), including, but not limited to, how and to whom disbursements may be made, is set forth in the Trust Agreement, a true and correct copy of which is attached, hereto, as Appendix D.

84. The Settlers shall keep the Trust in effect until the earlier of: (a) the Department certifies that the Remedial Action has been completed, as provided in Paragraph 50(b), and any remaining funds have been utilized to reimburse the Department’s in accordance with the terms of the Trust Agreement and Paragraph 89, below; (b) the Department terminates the Trust pursuant to Paragraph 85; or (c) the Department has determined the funds deposited into the Trust to be insufficient to implement the Remedial Action to implement the SOD and cannot be added within 18 months, as provided in Paragraph 53.

85. In the event that the Department determines that CDP has failed to fulfill any obligations as required under this Consent Decree or that any of the Remedial Action is being performed by CDP inconsistent with the SOD or any Amended SOD, the Department may declare that CDP is in default of this Consent Decree and proceed to forfeit or to draw down in whole or in part the Trust, according to the terms of the Trust Agreement and any applicable statutes, and the Department may proceed to undertake the performance of that work on any or all Remedial Action without complete or partial work being performed by CDP. However, before such collection can be made, the Department shall notify CDP in writing of the obligation which it has failed to perform, and shall provide CDP a reasonable time, not to exceed thirty (30) calendar days, to fulfill obligations, satisfactorily perform required work, become current with the approved schedule for the obligations, or propose to the Department a modification of a work plan and schedule, subject to Department review and approval as set forth further in Paragraphs 65 to 73 (entitled “Submittal Approval”). CDP may dispute the Department’s determination that grounds exist to forfeit or draw down in whole or in part the Trust through the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105.

PAYMENTS BY SETTLORS

86. Within forty-five (45) calendar days from the effective date of this Consent Decree and in payment toward the Remedial Action:

(a) Settlers JMI and Whittaker, jointly, shall pay into the Trust **SEVEN MILLION THREE HUNDRED AND THIRTY-FIVE THOUSAND DOLLARS** (\$7,335,000), less the necessary and appropriate cost of implementing the Remedial Action for OU3 of the Site that the Department has reimbursed or approved for

reimbursement to JMI and Whittaker, which is equal to **ONE HUNDRED AND SIX THOUSAND SIX HUNDRED AND FIFTY-ONE DOLLARS AND FORTY-NINE CENTS** (\$106,651.49), as set forth in Paragraph HH;

(b) Settlor CDP shall pay into the Trust **ONE MILLION TWO HUNDRED AND FIFTY THOUSAND DOLLARS** (\$1,250,000); and

(c) Settlor Marcegaglia shall pay into the Trust **FOUR HUNDRED THOUSAND DOLLARS** (\$400,000).

(d) The Settlers shall establish a financial assurance fund (for holding within the Trust) with payments or one or more letters of credit, bonds, or other financial assurance instrument reasonably acceptable to the Department (“Financial Assurance”) totaling **TWO MILLION FIVE HUNDRED THOUSAND DOLLARS** (\$2,500,000) to serve as a financial reserve that the Department may draw upon only for any Remedial Action activities that the Department deems necessary and appropriate to address any area of previously unknown contamination that are discovered to exist at the Site during the Data Gap Pre-Design Investigation, containing hazardous substances and/or contaminants that exceed Act 2, Chapter 3 standards, as applied to the Remedial Action (“a Previously Unknown Area of Identified Contaminants of Concern”). The Department commenced the Data Gap Pre-Design Investigation in the Winter of 2025-2026. The results of the Data Gap Pre-Design Investigation and any recommendations for further investigations or activities will be identified in the Data Gap Pre-Design Investigation Report that will be completed by the Department or its agents and accepted by the Department. The financial assurance fund shall be known as the “Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern.”

(e) The Settlers agree to establish the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern in the following manner:

i. Settlers JMI and Whittaker, jointly, shall establish a Financial Assurance(s) in the amount of **TWO MILLION THREE HUNDRED EIGHTY-EIGHT THOUSAND AND SEVEN HUNDRED FIFTY DOLLARS** (\$2,388,750);

ii. Settlor Marcegaglia shall establish a Financial Assurance in the amount of **ONE HUNDRED ELEVEN THOUSAND TWO HUNDRED FIFTY DOLLARS** (\$111,250);

iii. Financial Assurances shall be made payable to the “The Bishop Tube Site QSF” and shall be sent to Trustee, de maximis, inc., 450 Mountbrook Lane, Knoxville, TN 37919-2705, and to the “Commonwealth of Pennsylvania, Hazardous Sites Cleanup Fund,” but, should the Trust be terminated, in accordance with the Consent Decree and/or the Bishop Tube Site QSF Agreement, then Financial Assurances shall be sent to Bonnie McClennen, Environmental Group Manager, Hazardous Sites Cleanup Group, Pennsylvania Department of Environmental Protection, 2 East Main Street, Norristown, PA 19401.

(f) Should there be (i) no discovery of a Previously Unknown Area of Identified Contaminants of Concern, as reported in the Department-accepted Data Gap Pre-Design Investigation Report, or (ii) should the Department determine in its reasonable judgment that the funds set forth in Paragraphs 86(a)-(c) are sufficient to cover both remedial response action activities needed to fully address any identified Previously Unknown Area of Identified Contaminants of Concern and complete the performance of the Remedial Action to implement the SOD or any Amended SOD, then the Department will immediately send written confirmation to the Settlers and the Trustee of the Trust allowing Settlers JMI, Whittaker, and Marcegaglia to withdraw and/or release said Financial Assurance(s) from the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern back to those Settlers in a proportionate amount to their contribution to this fund;

(g) Should it be discovered that there is a Previously Unknown Area of Identified Contaminants of Concern, as reported in the Department-accepted Data Gap Pre-Design Investigation Report and that, in the Department's reasonable judgment, the funds set forth in Paragraphs 86(a)-(c) are insufficient to cover both remedial response action activities needed to fully address any identified Previously Unknown Area of Identified Contaminants of Concern and complete the performance of the Remedial Action to implement the SOD or any Amended SOD, the Department may draw down from the Financial Assurance(s) in the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern only that amount deemed reasonably necessary to complete the performance of remedial response action activities to address any identified Previously Unknown Area of Identified Contaminants of Concern.

(h) The Department shall review the Data Gap Pre-Design Investigation Report, a copy of which shall promptly be provided to Settlers upon completion, and inform the Settlers of whether the Department accepts the report and whether it will release or draw down on the Financial Assurances in the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern no later than July 1, 2026. In the event the Department deems it reasonably necessary to draw down on the Financial Assurances in the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern, the Department shall provide to the Settlers a written statement of the amount proposed to be withdrawn together with a scope of work and all documentation supporting the Department's withdrawal, which Settlers JMI, Whittaker, and Marcegaglia shall have a reasonable opportunity to review and comment upon. Any portion of the Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern not drawn down upon shall be releasable to Settlers JMI, Whittaker, and Marcegaglia (with prior written confirmation by the Department to the Settlers JMI, Whittaker, and Marcegaglia and the Trustee of the Trust, as set forth in Paragraph 86(f)), as soon as the Department is able, in its reasonable judgment, to determine that no further portion of that fund may be needed to fully address any identified Previously Unknown Area of Identified Contaminants of Concern and such determination being made no later than five (5) years from the effective date of this Consent Decree.

(i) Settlers' financial obligations for Any Previously Unknown Area of Identified Contaminants of Concern shall be limited to the amounts set forth in Paragraphs 86(d) and 86(e) and no Settlor shall bear any responsibility or liability for any other Previously Unknown Areas of Identified Contaminants of Concern, discovered to exist at the Site after the Department's acceptance of the Data Gap Pre-Design Investigation Report.

87. Each payment, other than bonds or letters of credit for the Fund to Address Previously Unknown Areas of Identified Contaminants of Concern, shall be made by corporate check or the like made payable to "The Bishop Tube Site QSF" and shall be sent to:

de maximis, inc.
450 Mountbrook Lane
Knoxville, TN 37919-2705

88. After the Trust has been funded, as set forth in Paragraphs 86, above, the Trust shall pay all costs incurred by CDP that the Department determines, as set forth in Paragraph 83, are reasonable and necessary or appropriate to perform the selected Remedial Action set forth in the SOD or any Amended SOD and in accordance with this Consent Decree and the Trust Agreement. CDP shall submit statements constituting demands for payment of such reasonable and necessary or appropriate response costs in the format and level of detail shown in the Trust Agreement to the Trustee and the Department no less than quarterly. The Trustee shall make payment for reasonable and necessary or appropriate response costs to the Party requesting payment or, at the option of CDP, make payment directly to the contractors performing such work at CDP's direction of such costs of the amount specified in its annual statement hereof, in the manner and in accordance with the terms of the Trust Agreement. In no event shall CDP be required to advance payment to third parties for such reasonable and necessary or appropriate response costs and, thereafter, seek reimbursement from the Trust.

89. Upon the Department's Certification of Completion of Remedial Action of OU2, pursuant to Paragraph 50(b), the Trust shall reimburse the Department for its reasonable and necessary or appropriate response costs incurred in response to the releases and threatened releases at the Site, including those identified in Paragraph NN, and future oversight costs, in accordance with the Trust Agreement (net of any portion of such proceeds that may be needed to fund the Remedial Action, and net of any funds needed to pay for Trust administration in accordance with the Trust Agreement).

90. For as long as CDP shall have ownership of the Source Property, CDP shall, in addition to making payment for settlement as set forth in Paragraph 86, above, make good faith, reasonable efforts to pursue grant monies through the Industrial Sites Reuse Program ("ISRP"), offered by the Pennsylvania Department of Community and Economic Development ("DCED"), to be contributed in their entirety to the cost of the Remedial Action, if obtained. CDP shall not be responsible for any matching funds that the ISRP may require to release such grant monies, but rather such matching funds may be payable by the Trust. Should the ISRP release any such grant monies, the recipient shall deposit all monies into the Trust if permitted by the terms of the ISRP grant. If not so permitted, then all such monies shall be disbursed in accordance with

DCED requirements and any required ISRP grant agreement, in which event the grant funds shall be utilized to facilitate the implementation of the Remedial Action and cover costs and expenses otherwise reimbursable or payable by the Trust, to the extent such use is not prohibited by the DCED requirements or ISRP grant agreement.

91. Nothing in Paragraphs 86 through 91, herein, shall in any way affect any liability of any Settlor with respect to response costs incurred by the Department for future releases of contaminants from the Site not addressed by the SOD or any Amended SOD. In addition, nothing in Paragraphs 86 through 91, herein, shall affect any Settlor's liability for costs incurred by the Department due to any Settlor's non-compliance with this Consent Decree.

FAILURE TO MAKE PAYMENT

92. If any Settlor does not make the payment according to Paragraph 86, interest shall be paid by that Settlor to the Department on the unpaid balance calculated according to Section 702(b) of HSCA, 35 P.S. § 6020.702(b).

93. Payments owed by a Settlor under this Consent Decree shall be paid by that Settlor with a penalty charge of One Thousand Dollars (\$1,000) per day that such payment is late. Such payment shall be considered a stipulated penalty and shall be in addition to the interest required by Paragraph 92 and any costs recovered under Paragraph 96.

94. All interest and stipulated penalties owed to the Department under Paragraphs 92 and 93 shall be due and payable automatically and without notice upon the Settlor's failure to make the payment according to Paragraph 86.

95. Interest and stipulated penalties paid pursuant to this Consent Decree shall be in addition to any other remedies or sanctions available to the Department including, but not limited to, civil penalties pursuant to Section 1104 of HSCA, 35 P.S. § 6020.1104.

96. If the Department must bring an action against any Settlor to collect any amount, interest, or stipulated penalty due under this Consent Decree, that Settlor shall reimburse the Department for all costs and expenses of such action, including, but not limited to, Department personnel costs and reasonable attorneys' fees.

CIVIL PENALTIES

97. In the event a Settlor fails to comply in a timely manner with any term or provision of this Consent Decree, that Settlor shall be in violation of this Consent Decree, except as otherwise provided in the Failure to Make Payment Section, above. If, after written notice by the Department to the Settlor of the alleged violation, the Settlor fails to cure any such violation within thirty (30) days of receiving notice of the violation from the Department, including as provided in Paragraph 85 ("Assurance of Performance"), then the Department, in addition to any other applicable remedies, may apply to the Court in the Litigation to request the imposition of civil penalties. If the Department proves that such Settlor has violated the Consent Decree, the Court may impose civil penalties in an amount to be determined by the Court.

98. Any payment of civil penalties awarded by the Court under this Paragraph shall neither waive a Settlor's duty to meet its obligations under this Consent Decree nor preclude the Department from seeking an order of the Court in the Litigation to compel a Settlor's compliance with the terms and conditions of this Consent Decree. The payment resolves only a Settlor's liability for civil penalties arising from the violation of this Consent Decree for which the payment is made.

99. Civil penalties shall not be imposed under this Consent Decree for any period of time during which the parties are engaged in the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105, to determine a good faith dispute, including, but not limited, to any rejection by the Department of a force majeure claim. The Court shall determine if the dispute was in good faith.

PURSUIT OF NON-SETTLOR PARTIES

100. The Department shall make good faith, reasonable efforts to pursue its claims against Christiana and to recover any of its available assets, including, but not limited to, insurance proceeds from known insurers of Christiana, who insured Christiana during its ownership and/or operation at the Site. Should any Party or its insurers recover such assets of Christiana, it will deposit such liquidated assets, net of proceeds dedicated for the recovery efforts, into the Trust for disbursement for response action costs, in the manner set forth further, herein, and in the Trust Agreement.

DECISIONS OF THE DEPARTMENT

101. Any decision that the Department makes under the provisions of this Consent Decree shall not be appealable to the Environmental Hearing Board or to any administrative or judicial forum except as may be appealable to the Court in the Litigation, as set forth in the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105. At no time may any Settlor challenge the content or validity of this Consent Decree, the Findings agreed to in this Consent Decree, or the selection of the Remedial Action established in the Department's SOD in any proceeding under the Dispute Resolution Procedures of this Consent Decree or an action to enforce the terms of this Consent Decree.

102. With regard to any decision made to implement this Consent Decree, the Department's decision shall be part of and is an obligation of this Consent Decree. In the event any Settlor requests dispute resolution pursuant to the Dispute Resolution Procedures, as set forth in Paragraphs 103 through 105, the final decision resolving the dispute shall be the decision which shall be part of and an obligation of this Consent Decree.

DISPUTE RESOLUTION

103. If a Settlor disagrees with a Department decision regarding or made pursuant to this Consent Decree or the Trust Agreement, the Settlor shall have fourteen (14) calendar days from the issuance of the decision to submit a written statement of dispute to the Department. The statement of dispute shall be submitted to the Regional Director of the Department's

Southeast Regional Office, who will issue a written determination. When evaluating a dispute raised by a Settlor under this Paragraph, the Regional Director may consider the reasonableness of the actions of all Parties involved in the dispute. The Department's original decision, the Settlor's statement of dispute, and the Department's written decision resolving the dispute shall constitute the record of dispute, which shall be considered part of the Administrative Record. Once a decision has been resolved pursuant to these Dispute Resolution Procedures, the Settlor shall not challenge the same decision in a subsequent statement of dispute.

104. A Settlor may appeal the decision of the Regional Director pursuant to Paragraph 101 to the Court by filing a statement of dispute to the Court in the Litigation under docket number 08-cv-6010 in any dispute: (a) in which the Department is seeking the imposition of civil penalties; (b) involving an attempt by the Department to declare a default under the Consent Decree and forfeit or draw down (in whole or in part) the Trust, pursuant to Paragraph 85, above; (c) a refusal by the Department to certify that the Remedial Action has been completed, as provided in Paragraph 50(b), above; (d) a refusal by the Department to provide to CDP a Statement of No Further Remedial Action Obligations, under Paragraph 53; (e) an unreasonable refusal by the Department to grant approvals under Paragraphs 66 through 74; (f) a decision by the Department to take over the Remedial Action pursuant to Paragraph 70, above; (g) a decision by the Department to invoke a reopener in, or otherwise take action against a Settlor pursuant to, Paragraphs 108 and 109; or (h) a decision made by the Department under the Trust Agreement. Without limitation to any other right of enforcement, provided by law or this Consent Decree, the Department may appeal to the Court in the Litigation any decision or action of CDP under the Trust Agreement, including, but not limited to, the refusal to provide a written approval. When determining any appeal by a Settlor under this paragraph, the Court may consider the reasonableness of the actions of all Parties involved in the dispute.

105. Except as set forth in Paragraph 108(c) relating to CDP, if the Department seeks Civil Penalties under Paragraphs 97 through 99 (entitled "Civil Penalties"), or if the Department seeks to enforce this Consent Decree, the Settlor may raise in response only those issues that have been preserved in its statement of dispute filed pursuant to the Dispute Resolution Procedures in this Section. In any such action, the Settlor bears the burden of proving that the Department's decision was against the weight of the evidence, on the basis of the Administrative Record. The Settlor's exercise of the dispute resolution procedure authorized by this Section shall not modify the Settlor's obligation to comply with decisions made pursuant to this Consent Decree unless the Court (or other court with jurisdiction over such action) has stayed those obligations.

DEPARTMENT'S COVENANT NOT TO SUE

106. Subject to the reservations of rights provided in Paragraphs 108 through 110 (entitled "Reopeners/Reservations of Rights") and 111 (entitled "Non-applicability/Reservations of Rights") and a Settlor's compliance with this Consent Decree, the Department hereby covenants not to sue or to take administrative action against such Settlor or its insurers, pursuant to HSCA, 35 P.S. § 6020.101 *et seq.*, CERCLA, 42 U.S.C.A. §§ 9601-9675, or any other environmental state or federal statutory or common law for response costs, response actions, from natural resource damages, and for injunctive relief arising from the release or threatened

release of hazardous substances and/or contaminants at the Site, as identified and addressed in the SOD or any Amended SOD or arising from the remediation of such release or threatened release. This covenant not to sue shall become effective upon the entry of the Consent Decree by the Court and as to each Settlor after the Department is in receipt of that Settlor's payment, as set forth in Paragraphs 86 and 87. This covenant does not extend to any action by the Department to enforce the terms of this Consent Decree.

NON-ASSIGNMENT

107. Subject to the reservations of rights provided in Paragraphs 108 through 110 (entitled "Reopeners/Reservations of Rights") and 111 (entitled "Non-applicability/Reservations of Rights") and excluding any claims or cause of action available to the Department to bring, pursuant to Paragraphs 92 through 96 (entitled "Failure to Make Payment"), Paragraphs 97 through 99 (entitled "Civil Penalties"), Paragraph 100 (entitled "Pursuit of Non-Settlor Parties"), and Paragraph 122 (entitled "Additional Remedies"), the Department will not assign or otherwise convey or transfer any claims or cause of actions subject to the Covenant Not to Sue in Paragraph 106, above, that it may have against a Settlor to any entity, whether or not a party to the Consent Decree.

REOPENERS/RESERVATIONS OF RIGHTS

108. Notwithstanding any other provision of this Consent Decree, and except as provided in this Section, the covenant not to sue in Paragraph 106, above and the release in Paragraph 114, below, shall be voidable by the Department, and the Department reserves the right to sue any Settlor for additional response costs relating to the Site, or to issue an administrative order requiring a Settlor to perform Additional Remedial Actions relating to the Site, if any one of the following occur:

(a) Such Settlor, its officers, directors, employees, contractors, or agents, falsify information, reports, or data, or make false representations or statements in a record, report or document submitted under this Consent Decree and such actions prevent needed clean-up at the Site;

(b) CDP fails to implement the Remedial Action for the Site in compliance with any work plan approved by the Department, except that this provision shall not apply to the lack of implementation of the Remedial Action in accordance with the SOD or any Amended SOD due to the limitations on CDP's obligations as stated in Paragraphs 41, 53, and 82; or

(c) The level of risk is increased from the level of risk in existence as of September 21, 2022 to a level of risk beyond the acceptable risk range at the Site, due to substantial changes in exposure conditions based on new information obtained about a hazardous substance and/or contaminant at the Site, which revises exposure assumptions beyond the acceptable risk range established under Chapter 3 of Act 2.

The information received by and presently known to the Department includes only that information set forth in the SOD and the administrative record related to the Site.

109. Notwithstanding any other provision of this Consent Decree, the reopener set forth in Paragraph 108(b) shall be applicable only to CDP and only if it fails to implement the Remedial Action for the Site in compliance with final work plans approved by the Department.

110. Notwithstanding any other provision of this Consent Decree, the reopener set forth in Paragraph 108(c) shall be applicable only to CDP, and not any other Settlor, if the level of risk is increased beyond the acceptable risk range due to a change in the use or occupancy of the Source Property or any part thereof, if such change in use, occupancy or other circumstances is requested by or caused by CDP. The reopener in Paragraph 108(c) shall not be applicable to any Settlor, other than CDP, if the risk level is increased beyond the acceptable risk level due to any action or omission by CDP, its principals, affiliates, agents, successors or assigns. Notwithstanding any other provision of this Consent Decree, the reopener set forth at Paragraph 108(c) shall not be applicable to CDP, its principals, affiliates, agents, successors or assigns after CDP conveys its interests in the Source Property to any third party if the level of risk is increased beyond the acceptable risk range due to a change in the use or occupancy of the Source Property or any part thereof, unless such change in use, occupancy or other circumstances is requested by or caused by CDP.

NON APPLICABILITY/RESERVATIONS OF RIGHTS

111. The Department's covenant not to sue set forth in Paragraph 106, above, and the release in Paragraph 114, below also shall not apply to the following claims by the Department against any Settlor for:

- (a) failure to comply with this Consent Decree;
- (b) past, present, or future releases or threatened releases of hazardous substances and/or contaminants outside the boundaries of the Site; and
- (c) past, present, or future violations of state or federal criminal law.

CONTRIBUTION PROTECTION

112. Subject to the Department's Reopeners/Reservation of Rights in Paragraphs 108 through 111, Settlers are persons that have resolved their liability to the Department for the Site and are eligible for protection from claims for contribution regarding matters addressed in this settlement, as provided by Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and Section 705(c)(2) of HSCA, 35 P.S. § 6020.705(c)(2). This contribution protection is intended to be as broad as permissible under CERCLA and HSCA, and the "matters addressed" in this settlement encompass all of the Response Actions and response costs at the Site. This contribution protection shall become effective upon entry of this Consent Decree by the Court and receipt of the payment required in Paragraph 86 and shall terminate for any Settlor with respect to, and to the extent of, that Settlor's failure to meet any of the requirements of this Consent Decree applicable to that Settlor.

COVENANT NOT TO SUE BY SETTLORS RELATING TO REMEDIAL ACTION

113. Each Settlor covenants not to sue and shall not assert any claims, counterclaims, crossclaims, third-party claims, demands or causes of action, in law or in equity, against the Commonwealth, against each other or against another Party's insurers in their capacity as such regarding the application of Sections 708, 709 and 1301 of HSCA, 35 P.S. §§ 6020.708, 6020.709, and 6020.1301, or on any other basis, from the release or threatened release of hazardous substances and/or contaminants at the Site, as identified and addressed in the SOD or any Amended SOD:

(a) For or arising from the release or threatened release of hazardous substances and/or contaminants at the Site resulting from any Remedial Action at the Site, or arising out of an action taken in accordance with this Consent Decree, except that this covenant not to sue shall not apply to CDP, if its violation of this Consent Decree caused the release; or

(b) For or arising from the release or threatened release of hazardous substances and/or contaminants addressed in the SOD or any Amended SOD after the Department certifies that Remedial Action at the Site has been completed, pursuant to Paragraph 50(b), or provides to CDP a Statement of No Further Remedial Action Obligations, pursuant to Paragraph 53.

This Paragraph 113 does not apply to any claims, demands or causes of action, in law or in equity, that a Settlor may have against its own insurers.

DEPARTMENT'S RELEASE OF CDP'S OBLIGATIONS UNDER PAST AGREEMENT

114. Subject to CDP's compliance with this Consent Decree, the Department hereby releases CDP from any further liability or obligations, set forth under the PPA. It shall be the exclusive obligation of CDP, its assigns and successor owners of the Source Property, to implement and pay for all additional remedial work and costs necessary (in addition to the obligations imposed upon CDP under Paragraphs 54, 55, 59, 60, 61, 62 and 63 of this Consent Decree) without payment by the Trust Fund or by any other Settling Party to: (i) perform any Remedial Action or implement and maintain institutional and/or engineering controls resulting from or related to any use or intended use of the Source Property; and/or (ii) otherwise accommodate CDP's development of the Source Property.

WAIVER OF OTHER CLAIMS BY SETTLORS

115. Each Settlor hereby waives and releases any and all claims and causes of action, under any federal or state law or regulation, at common law or in equity, of any kind, nature or description relating to the Site that the Settlor may have against any other Settlor, its parents, subsidiaries, affiliates and/or the insurers of another Settlor in their capacity as such, including,

without limitation, any claims that the Settlor did assert or could have asserted against any other Settlor in the Litigation.

116. Settlers shall not assert any claims for reimbursement, contribution, and/or indemnification from the Pennsylvania Hazardous Sites Cleanup Fund for matters arising from the release and threatened release of hazardous substances and/or contaminants at the Site, arising out of the Remedial Action at the Site, or arising out of this Consent Decree.

ACKNOWLEDGMENT OF NO OBLIGATION

117. Settlers and the Department acknowledge that the Department has no obligation to defend the Settlers, and the Department acknowledges that the Settlers have no obligation to defend the Department, in any suit, demand, or claim for contribution for any matters arising from the release and threatened release of hazardous substances and/or contamination at the Site, arising out of the Remedial Action at the Site, or arising out of this Consent Decree.

LIABILITY OF SETTLOR

118. Each Settlor shall inform all persons necessary for the implementation of this Consent Decree of the terms and conditions of this Consent Decree. Each Settlor shall be liable for any violation of this Consent Decree caused by, contributed to, or allowed by the directors, officers, agents, managers, servants, and privies of that Settlor, including, but not limited to, contractors and consultants. Except as provided in Paragraph 123 (entitled “Transfer of the Source Property”), the Settlor remains liable for any violation of this Consent Decree caused by, contributed to, or allowed by its successors and assigns.

EXISTING OBLIGATIONS UNAFFECTED

119. Except as specifically provided in Paragraphs 108 through 111, above, nothing set forth in this Consent Decree is intended, nor shall be construed, to relieve or limit a Settlor’s obligation to comply with any existing or subsequent statute, regulation, permit, or order. In addition, nothing set forth in this Consent Decree is intended, nor shall be construed, to authorize any violation of any statute, regulation, order, or permit issued or administered by the Department.

ALLOCATION

120. The Settlers acknowledge that the Department prepared a nonbinding preliminary allocation of proportionate responsibility (“NBAR”), which it provided to the Settlers during the Parties’ mediation process on or about February 1, 2021. The Settlers accept that this provision of an NBAR satisfies all requirements, including, but not limited to, the Department’s provision of written notice of such NBAR to the Settlers, as set forth in Sections 708 of HSCA, 35 P.S. § 6020.708. The Parties did not reach agreement on the NBAR, but, by mutual agreement, continued with the mediation process. The Settlers waive any and all claims or reservation of rights that may arise out of actions or inactions by the Department, regarding any procedure related to the NBAR process, or any right or remedy, which shall be authorized by, or otherwise set forth in, HSCA, including, but not limited to, Section 708 or Section 709 of HSCA, 35 P.S. §§ 6020.708 or 6020.709, and any other applicable federal or state law.

RETENTION OF RECORDS

121. For six (6) years after termination of this Consent Decree, each Settlor shall use reasonable efforts to retain all records and documents, including all cost documentation, in its possession or in the possession of its divisions, employees, agents, contractors, accountants, and attorneys, which in any way relate to the Remedial Action performed at the Site pursuant to this Consent Decree, despite any document retention policy to the contrary. At the end of this six-year period, each Settlor or the agent(s) of each Settlor that has custody of such documents, shall notify the Department at least sixty (60) calendar days prior to the destruction of any such documents. Upon request by the Department, each Settlor will make best efforts to make available to the Department such records or copies of such records or, at the Settlor's discretion, deliver the documents to the Department in lieu of destruction.

ADDITIONAL REMEDIES

122. (a) In the event a Settlor fails to comply with any provision of this Consent Decree applicable to that Settlor, the Department may, in addition to the remedies prescribed herein, pursue any action in the United States District Court for the Eastern District of Pennsylvania available for a violation of an order of the Court, including an action to enforce this Consent Decree or to hold a Settlor in contempt;

(b) The remedies provided by this Paragraph and Paragraphs 97 through 99 (entitled "Civil Penalties") are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy or action shall not be deemed to be a waiver of that remedy or action. The payment of a civil penalty, however, shall preclude any further assessment of civil penalties for the violation for which the civil penalty is paid;

(c) Nothing in this Consent Decree shall prevent the Department from performing such Remedial Action as the Department deems necessary. If, pursuant to Paragraph 70, the Department performs any Remedial Action because of CDP's failure to comply with this Consent Decree, CDP will be unable to seek or receive reimbursement of response costs from anyone, including the Trust, for any costs for the Remedial Action that the Department determined to be inconsistent with the SOD or the Remedial Design/Remedial Action Plan for OU1 and OU2; and

(d) Settlers agree that failure to comply with the provisions of this Consent Decree applicable to that Settlor constitutes a failure to comply with an "enforcement action" as provided in Section 1301 of HSCA, 35 P.S. § 6020.1301.

TRANSFER OF THE SOURCE PROPERTY

123. (a) The duties and obligations under this Consent Decree shall not be modified, diminished, terminated, or otherwise altered by the transfer of any legal or equitable interest in the Source Property of the Site or any part thereof. However, if an owner or possessor of the

Source Property causes or commits actions or omissions constituting a reopener set forth in Paragraphs 108 through 111, above, then the reopener shall not apply to any Settlor(s) that did not cause or commit such actions or omission.

(b) If CDP intends to transfer any legal or equitable interest in the Source Property which is affected by this Consent Decree, CDP shall serve a copy of this Consent Decree upon the prospective transferee of the legal and equitable interest at least thirty (30) calendar days prior to the contemplated transfer and shall simultaneously inform the Environmental Cleanup and Brownfields Program in the Southeast Office of the Department of such intent. Any transfer of the Source Property or any part thereof shall be subject to the Environmental Covenant set forth in Paragraph 60, above, and Appendix E, and any conveyance of the Source Property of the Site, or any portion thereof, shall provide that the obligations for access and use set forth in Paragraphs 54, 55, 59, 60, 61, 62 and 63, above, shall run with the land.

(c) Any person considering taking legal or equitable interest of the Source Property may communicate directly with the Department, in accordance with Paragraph (124) (“Correspondence with the Department”) at least ninety (90) days prior the contemplated transfer of any legal or equitable title in the Source Property to inform the Department of its intent to acquire such interest in the Source Property and, provided that such person meets the terms and conditions set forth in the draft Consent Order and Agreement (Prospective Purchaser Agreement), attached hereto, at Appendix F, and is willing to negotiate in good faith with the Department on all remaining terms and conditions, as set forth in that draft Consent Order and Agreement (see, e.g., bracketed areas), and the Department and the prospective purchaser accept such negotiated terms and conditions, such person may avail itself of entry into that document, subject to the terms and conditions contained therein, including, but not limited to, the notice and comment period, required by Section 1113 of HSCA, 35 P.S. § 6020.1113, the Department’s ability to withdraw consent based on comments received, and the effectiveness of that Consent Order and Agreement.

CORRESPONDENCE WITH DEPARTMENT

124. All correspondence with the Department concerning this Consent Decree shall be addressed to:

Dustin A. Armstrong
Environmental Protection Specialist
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401
(484) 250-5723
Email: darmstrong@pa.gov

With copy to:

Adam N. Bram
Regional Counsel
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Office of Chief Counsel
2 East Main Street
Norristown, PA 19401
(484) 250-5868
Email: abram@pa.gov

CORRESPONDENCE WITH SETTLORS

125. (a) All correspondence with Whittaker concerning this Consent Decree shall be addressed to:

Tasha Miracle, Esq.
Assistant General Counsel – EHS
Parker-Hannifin Corporation
6035 Parkland Boulevard
Cleveland, OH 44124-4141
Telephone: (216) 896-2551
Email: tasha.miracle@parker.com

With copy to:

Benjamin G. Stonelake, Esq.
Frank L. Tamulonis, Esq.
Blank Rome LLP
One Logan Square
130 North 18th Street
Philadelphia, PA 19103
Telephone: (215) 569-5500
Email: ben.stonelake@blankrome.com
Frank.tamulonis@blankrome.com

(b) All correspondence with JMI concerning this Consent Decree shall be addressed to:

Amy Donohue-Babiak, Esquire
Secretary and Assistant General Counsel
Johnson Matthey Inc.
1397 King Road
West Chester, PA 19380
Telephone: 610-971-3084

Email: Amy.Donohue-Babiak@matthey.com

(c) All correspondence with CDP concerning this Consent Decree shall be addressed to:

Richard Heany
President – Constitution Drive Partners, L.P.
2201 Renaissance Blvd., Suite 410
King of Prussia, PA 19406
Telephone: (610) 239-6100
Email: rheany@mlpventures.com

With copy to:

Jonathan Spergel, Esquire
Manko, Gold, Katcher & Fox LLP
Three Bala Plaza East, Suite 700
Bala Cynwyd, PA 19004
Telephone: (484) 430-2309
Email: jspergel@mankogold.com

And

Edmund Campbell, Esquire
Campbell Rocco Law LLC
2701 Renaissance Boulevard, Fourth Floor
King of Prussia, Pennsylvania 19406
Telephone: (610) 992-5885
Email: ECampbell@campbellroccolaw.com

(d) All correspondence with Marcegaglia concerning this Consent Decree shall be addressed to:

Elisa Scilhanick
General Counsel
Marcegaglia Group
Via Bresciani, 16
46040 Gazoldo degli Ippoliti
MN – Italy
Telephone: +39 0376 665432
Email: elisa.scilhanick@marcegaglia.com

Each Settlor shall notify the Department whenever there is a change in that Settlor's contact person's name, title, address, phone numbers, or email. Service of any notice for any purpose under this Consent Decree, including its enforcement, may be made by emailing or mailing a copy by first class U.S. mail to the above address. Service of any legal process for any purpose

under this Consent Decree, including a legal action, may be made by mailing a copy by first class U.S. mail to the above address, in addition to emailing a copy.

FORCE MAJEURE

126. In the event that a Settlor is prevented from complying in a timely manner with any time limit imposed in this Consent Decree solely because of a strike, fire, flood, act of God, or other circumstances beyond a Settlor's control, regardless of whether such other circumstances are similar to or of the same kind or nature as the circumstances specifically listed above, and which Settlor, by the exercise of all reasonable diligence, is unable to prevent, then the Settlor may petition the Department for an extension of time. An increase in the cost of performing the obligations set forth in this Consent Decree shall not constitute circumstances beyond the Settlor's control (except to the extent that such increased costs cause the total cost of the Remedial Action to exceed the balance of the Trust and such exceedance is not caused by CDP).

(a) A Settlor shall only be entitled to the benefits of this Paragraph if it notifies the Department within seven (7) calendar days by telephone and within fourteen (14) calendar days in writing of the date it becomes aware or reasonably should have become aware of the event impeding performance. The written submission shall include all necessary documentation, as well as a notarized affidavit from an authorized individual specifying the reasons for the delay, the expected duration of the delay, and the efforts which have been made and are being made by the Settlor to mitigate the effects of the event and to minimize the length of the delay. The initial written submission may be supplemented within fourteen (14) calendar days of its submission. The Settlor's failure to comply with the requirements of this Paragraph in a timely fashion shall render this Paragraph null and of no effect as to the particular incident involved.

(b) The Department will decide whether to grant all or part of the extension requested on the basis of all documentation submitted by the Settlor and other information available to the Department, and approval by the Department. In any subsequent litigation, the Settlor shall have the burden of proving that the Department's refusal to grant the requested extension was an abuse of discretion based upon the information then available to it.

SEVERABILITY

127. The Paragraphs of this Consent Decree shall be severable and should any part hereof, be declared invalid or unenforceable, the remainder shall continue in full force and effect between the Parties.

OPPORTUNITY FOR PUBLIC COMMENT

128. Pursuant to Section 1113 of HSCA, 35 P.S. § 6020.1113, the Department shall publish a notice in the *Pennsylvania Bulletin* and the *Daily Local News*, containing a summary of the terms of this Consent Decree and the Trust Agreement. This notice shall also be sent to the persons named in Paragraph 125. The Department shall receive and consider comments relating to

this Consent Decree for a minimum of sixty (60) calendar days from publication of this notice. The Department reserves the right to withdraw its consent to this Consent Decree, if the comments disclose facts or considerations which indicate that this Consent Decree is inappropriate, improper, or not in the public interest.

EFFECTIVE DATE

129. This Consent Decree shall be effective upon the date of entry by the Court. After the Department has filed a response to any significant written comments received pursuant to the notice of settlement, described in Paragraph 128 (entitled "Opportunity for Public Comment"), or in the event that no such comments are received, the Department will notify the Settlers, in accordance with Paragraph 125, and the Court may enter the Consent Decree on the docket in substantially the same form as contained, herein. However, if the Department notifies Settlers and the Court that it is withdrawing its consent to this Consent Decree in response to the public comments received pursuant to Paragraph 128, the terms of this Consent Decree shall be void, shall have no force or effect, and shall not be used as evidence in any litigation or any other proceeding.

ENTIRE AGREEMENT

130. This Consent Decree and the appendices hereto shall constitute the entire integrated agreement of the Parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein, in any litigation or any other proceeding.

ATTORNEYS' FEES

131. Except as expressly provided in this Paragraph, herein, and in Paragraph 96 ("Failure to Make Payment"), the Parties shall bear their respective attorneys' fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Decree. However, nothing in this Paragraph restricts or prohibits the Department from seeking and obtaining reimbursement from the Trust for past and future costs associated with the Remedial Action involving its legal counsel.

MODIFICATIONS

132. No changes, additions, modifications, or amendments of this Consent Decree shall be effective unless they are set out in writing and signed by the Parties, hereto.

TITLES

133. A title used at the beginning of any Paragraph of this Consent Decree may be used to aid in the construction of that Paragraph but shall not be treated as controlling.

LIST OF APPENDICES

134. The following Appendices are attached to and incorporated into this Consent Decree:

Appendix A is a map showing the approximate surface boundaries of the Site known to the Department.

Appendix B is the Administrative Record Docket.

Appendix C is the Statement of Decision.

Appendix D is the Trust Agreement.

Appendix E is the Draft Environmental Covenant for the Source Property.

Appendix F is the Draft Consent Order and Agreement (Prospective Purchaser Agreement).

EXECUTION OF AGREEMENT

135. This Consent Decree may be signed in counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument.

FINAL JUDGMENT

136. Upon entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between the Department and the Settlers as to all counts and claims related to the Site. The Court enters this judgement as a final judgment under Rules 54 and 58 of the Federal Rules of Civil Procedure. Any future action to enforce this Consent Decree or otherwise brought pursuant to this Consent Decree or Trust Agreement shall be brought in the United States District Court for the Eastern District of Pennsylvania.

SO ORDERED THIS _____ DAY OF _____, 202__.

HONORABLE JOSHUA D. WOLSON, J.

WE HEREBY CONSENT to the foregoing Consent Decree in *Commonwealth of Pennsylvania, Department of Environmental Protection v. Whittaker et al.*, U.S. District Court, E.D. of Pa., 08-cv-6010, relating to the Bishop Tube HSCA Site.

FOR THE COMMONWEALTH OF
PENNSYLVANIA, DEPARTMENT OF
ENVIRONMENTAL PROTECTION:

 3/4/2026

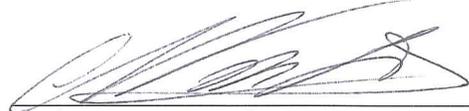
C. David Brown, P.G. DATE
Regional Manager
Environmental Cleanup and Brownfields

 3/4/2026

Adam N. Bram DATE
Regional Counsel

WE HEREBY CONSENT to the foregoing Consent Decree in *Commonwealth of Pennsylvania, Department of Environmental Protection v. Whittaker et al.*, U.S. District Court, E.D. of Pa., 08-cv-6010, relating to the Bishop Tube HSCA Site.

FOR THE SETTLOR
MARCEGAGLIA USA, INC.:



Andrea Marco Costi
President

DATE



Charles V. Keating
Secretary

DATE

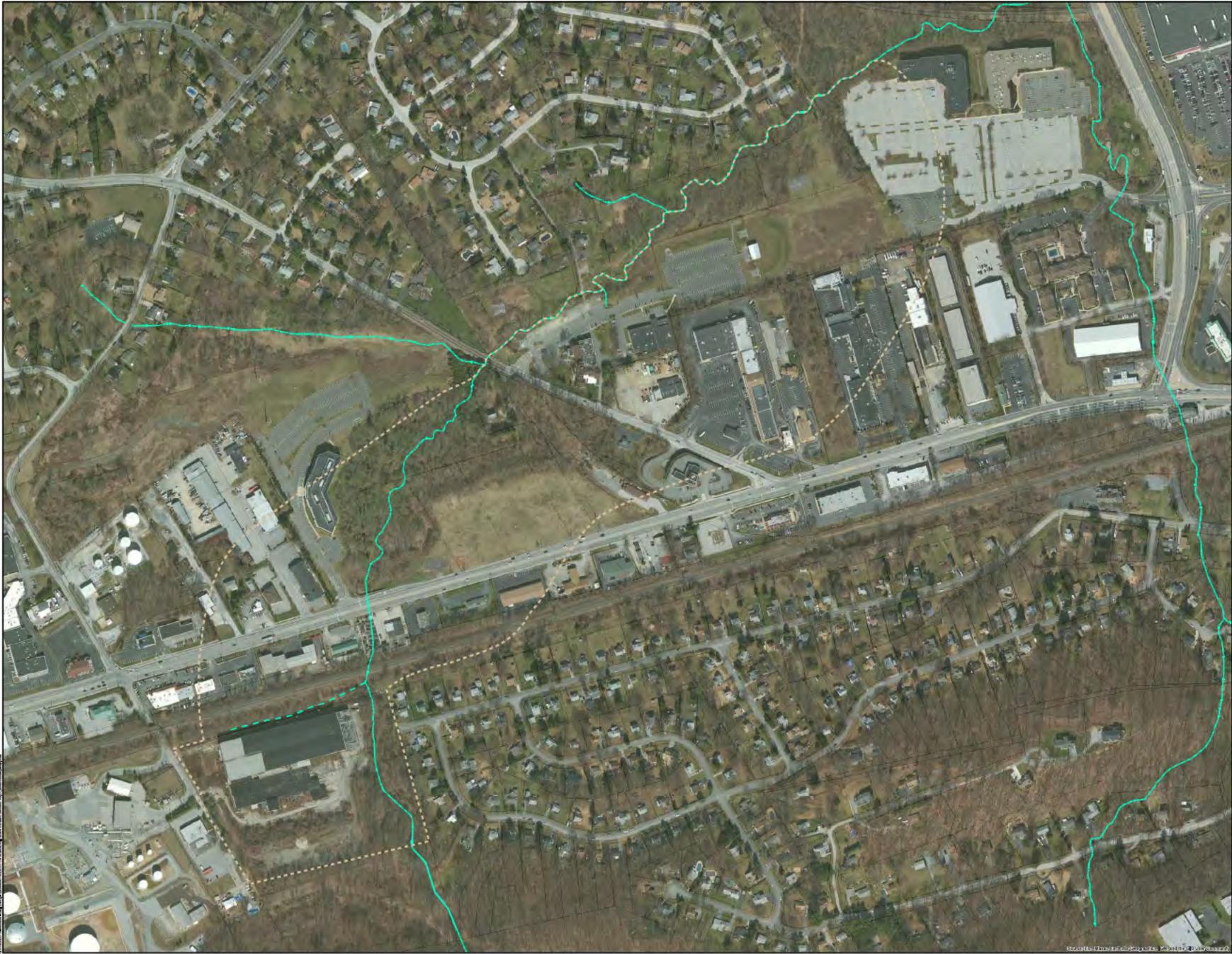


Kevin K. Douglass, Esquire
Attorney for Marcegaglia USA, Inc.

2/18/26
DATE

APPENDIX A

SITE MAP



Legend

- Site Boundary
- Stream
- Drainage Swale
- Parcels



SITE BOUNDARY MAP

FORMER HOP TUBE FACILITY
CHESTER COUNTY, PENNSYLVANIA

APPENDIX B

ADMINISTRATIVE RECORD DOCKET

**Commonwealth of Pennsylvania
Department of Environmental Protection**

ADMINISTRATIVE RECORD DOCKET

**Bishop Tube
East Whiteland Township, Chester County**

Remedial Response Action

Opened for public comment date: September 25, 2021

Comment period closed date: January 31, 2022¹

Hard copies of the Administrative Record are available for review in DEP's Southeast Regional Office and the East Whiteland Township Municipal Building. An electronic copy of the Administrative Record is available on DEP's website for the Site:

** Notation indicates that this information is incorporated into the administrative record only in the electronic version on DEP's website.*

*** Notation indicates that this information is incorporated into the administrative record electronically on DEP's website, and the hard copy is only in DEP's Southeast Regional Office.*

Part I. Initial Investigation/Site Discovery

<u>Date</u>	<u>Description</u>
<u>1968-1970, 1972 & 1973</u>	Historical facility records, including, but not limited to, PA Department of Health ("DOH") PA Department of Environmental Resources ("DER") Waste Discharge Inspection Reports, National Pollutant Discharge Elimination System ("NPDES") Permits, Correspondence, and Sample Results ("DEP Microfiche Files").*
<u>February 28, 1969</u>	<i>Agreement and Plan of Reorganization Between Matthey Bishop, Inc. (and its Subsidiary Bishop Tube Co.) and Whittaker Corporation (and its Subsidiary Whittaker Enterprises, Inc.). *</i>
<u>April 9, 1973</u>	<i>Engineering Report with a cover letter, dated April 27, 1973, prepared by Gilbert Associates, Inc. for Whittaker Corporation ("Whittaker").</i>
<u>1974</u>	DEP Microfiche Files *
<u>October 1974</u>	<i>Consent Order and Agreement ("CO&A") between PA DER and Christiana Metals Corporation.</i>

¹ On November 6, 2021, DEP extended the time period for review of the administrative record and submission of public comment from January 3, 2022 until January 31, 2022.

Bishop Tube Remedial Response
Administrative Record Docket

Part I. Initial Investigation/Site Discovery

<u>Date</u>	<u>Description</u>
<u>1974-1976</u>	<i>Plant Improvements and Pollution Incident and Prevention Reports</i> submitted by the Bishop Tube Company, on November 1, 1974, and related correspondence. *
<u>1975-1978</u>	DEP Microfiche Files *
<u>1977</u>	<i>Preliminary Report</i> submitted by the Bishop Tube Company on February 8, 1977, and related correspondence. *
<u>February 1978</u>	<i>Health Hazard Evaluation Determination Report, Bishop Tube Division, Christiana Metals, Inc.</i> prepared by U.S. Department of Health, Education, and Welfare, Center for Disease Control, National Institute for Occupational Safety and Health.
<u>1979</u>	DEP Microfiche Files *
<u>1979 - 1981</u>	Communications related to the initiation of a groundwater study. *
<u>May 1, 1980</u>	DER <i>Aquatic Biology Investigation – Stream: Little Valley Creek Watershed (1.15.0), Chester County, November 27, 1979.</i>
<u>1980 - 1981</u>	DEP Microfiche Files *
<u>July 1981</u>	Communications related to the Air Quality Incidents that occurred on June 9 and 10, 1981. *
<u>October 1981</u>	<i>Hydrogeologic Investigation for Bishop Tube Corp.</i> , prepared by Betz, Converse, and Murdoch, Inc., (“BCM”), including USGS water quality analysis from a groundwater sample, collected June 6, 1981.
<u>1981 - 1983</u>	<i>Pollution Prevention and Contingency Plan</i> , prepared by Resource Management International, Inc., for Bishop Tube Company, July 20, 1981, updated by Bishop Tube Company, December 1982 and October 1983, related correspondence. *
<u>1982</u>	DEP Microfiche Files *
<u>June/August 1982</u>	DER comments and response letter of <i>BCM’s Hydrogeologic Investigation</i> and Bishop Tube Company’s August 17, 1982 response letter.
<u>1983</u>	DEP Microfiche Files *
<u>November 29, 1983</u>	DER Potential Hazardous Waste Site Identification and Preliminary Assessment (EPA Form).
<u>1983 - 1991</u>	DER Hazardous Waste Inspection Reports and related Correspondence. *
<u>1984 - 1987</u>	DEP Microfiche Files *
<u>June 25, 1985</u>	<i>Site Inspection</i> of Bishop Tube Company prepared by NUS Corporation on behalf of the Environmental Protection Agency (“EPA”). **

Bishop Tube Remedial Response
Administrative Record Docket

Part I. Initial Investigation/Site Discovery

<u>Date</u>	<u>Description</u>
<u>January 1990</u>	BCM <i>Results of Implementation of Groundwater Remediation Work Plan Phase I</i> , prepared for Christiana Metals Corp. **
<u>June 29, 1990</u>	DER letter to Bishop Tube Co., Alloy Steel Corp., receipt for storage tank registration.
<u>June 12, 1991</u>	Philadelphia Suburban Water Company letter, reporting residential water supply analytical results.
<u>1993 - 1999</u>	DEP Microfiche Files *
<u>November 19, 1997</u>	<i>Environmental Audit of Damascus/Bishop Tube</i> , Frazer, PA Facility, prepared by Enviroplan Consulting for Damascus/Bishop Tube. *
<u>February 5, 1999</u>	O'Brien & Gere Engineers, Inc. letter offering to install a residential carbon wellhead treatment system.
<u>May 1999</u>	<i>Interim Remedial Action Workplan</i> , prepared by O'Brien & Gere Engineers, Inc. for Christiana Metals Corp. **
<u>June 10, 1999</u>	<i>February 1999 Groundwater Sampling Results</i> , submitted by O'Brien & Gere Engineers, Inc.

Part II. Further Investigation

<u>Date</u>	<u>Description</u>
<u>January 11, 2002</u>	<i>Phase I Site Characterization Report and Appendices, Soils, Sediment, Surface Water, and Shallow Groundwater, Bishop Tube Site</i> , prepared by Baker Environmental, Inc. for DEP ("Baker"). *
<u>June 21, 2002</u>	<i>Baker Phase II Groundwater Investigation</i> . **
<u>June 30, 2003</u>	<i>Baker Phase III Supplemental Soil Investigation Report and Appendices</i> .
<u>August 27, 2003</u>	DEP <i>Little Valley Creek Surface Water and Spring Monitoring: Sampling Event Report</i> .
<u>July 2, 2004</u>	<i>Baker Phase III Supplemental Groundwater Investigation Report and Appendices</i> .
<u>August 27, 2004</u>	<i>Baker Final Soil Gas and Shallow Groundwater Sampling Report</i> . **
<u>January 28, 2005</u>	DEP letter and enclosed residential indoor air quality sample results.
<u>March 16, 2005</u>	<i>Phase I Environmental Assessment Report</i> , prepared by Penn Environmental & Remediation, Inc. for O'Neill Properties Group, L.P. **
<u>April 2005</u>	DEP <i>Surface Water Investigation – Data Summary, Upstream of Lancaster Avenue – Source Area Discharge</i> .

Bishop Tube Remedial Response
Administrative Record Docket

Part II. Further Investigation

<u>Date</u>	<u>Description</u>
<u>February 19, 2007</u>	Weston Solutions <i>Summary of the November 2006 Subsurface Soil Investigation and Results, Bishop Tube Site</i> Letter Report.
<u>February 2008</u>	Baker <i>Final Supplemental Site Characterization Report</i> .
<u>July 16, 2008</u>	<i>Health Consultation</i> , prepared by Agency for Toxic Substances and Disease Registry (“ATSDR”).
<u>September 11, 2008</u>	DEP <i>Indoor Air Quality Sampling Results – Bishop Tube Site</i> , Memorandum (text, tables and figures).
<u>October 10, 2008</u>	DEP <i>April 2008 Surface Water Sampling Results – Bishop Tube Site</i> Memorandum.
<u>June 2009</u>	DEP <i>HRS Documentation Record</i> .
<u>December 3, 2009</u>	Baker <i>Final Shallow Groundwater Feasibility Study Report</i> .
<u>December 9, 2010</u>	<i>Remedial Investigation Report (Period of March 2009 to November 2010)</i> , prepared by Roux Associates, Inc. (“Roux”) for the Bishop Tube Project Team (Johnson Matthey Inc. (“JMI”) and Whittaker.)
<u>August 31, 2015</u>	Roux <i>Remedial Investigation Report</i> .
<u>October 9, 2015</u>	Roux <i>Treatability Study Completion Report, the Former Bishop Tube Property</i> .
<u>March 31, 2017</u>	Roux <i>Preliminary FS Screening Memorandum</i> .
<u>April 25, 2017</u>	<i>Remediation Scope of Work for Targeted Soil Excavation, Bishop Tube Facility, Revision 2</i> , prepared by Environmental Standards, Inc. for Constitution Drive Partners, L.P (“CDP”). **
<u>January 15, 2019</u>	Roux <i>Progress Report #122, including surface water, soil, and groundwater analytical data summaries</i> .
<u>August 5, 2020</u>	<i>Final Remedial Alternatives Analysis, GTAC 7-1-342 – Bishop Tube HSCA Site, Version 1.0.</i> , prepared by Groundwater & Environmental Services, Inc. (“GES”) for DEP.
<u>November 10, 2020</u>	GES <i>Technology Assessment, GTAC 7-1-342 – Bishop Tube HSCA Site, Version 1.0</i> Memorandum.
<u>December 16, 2020</u>	Roux <i>Former Bishop Tube Property, Additional Soil Investigation – Building 5 Area</i> Memorandum.
<u>December 18, 2020</u>	Roux <i>Former Bishop Tube Property, Feasibility Study Addendum, Remedial Alternative #8 – Basis of Design</i> Memorandum.

Bishop Tube Remedial Response
Administrative Record Docket

Part II. Further Investigation

<u>Date</u>	<u>Description</u>
January 13, 2021	Roux <i>Remedial Investigation Report, Former Bishop Tube Property Volume 1</i> and <i>Volume 2</i> ¹
January 13, 2021	Roux <i>Feasibility Study Report, Former Bishop Tube Property.</i>
August 24, 2021	Roux <i>Former Bishop Tube Property, Soil Investigation for Certain Inorganic Constituents, Groundwater Investigation for VOCs and Certain Inorganic Constituents</i> Memorandum.

Part III. General Correspondence

<u>Date</u>	<u>Description</u>
May 21, 1993	Richard W. Roeder, Esq. of Roeder & Rothschild (“Mr. Roeder”) to DEP on behalf of the Electralloy Corporation, regarding its bankruptcy.
March 3, 1998	DEP 35 P.S. § 6020.503 (“HSCA Section 503”) Information Request to Christiana Metals Corporation (“Christiana Metals”).
March 18, 1998	Mr. John J. McAleese, III, Esq. of Morgan, Lewis, and Bockius L.L.P Response on behalf of Christiana Metals to DEP’s HSCA Section 503 Information Request.
September 9, 2003	DEP HSCA Section 503 Information Requests to JMI, Whittaker, and Marcegaglia USA.
October 31, 2003	Mr. Robert W. Thomson, Esq. (“Mr. Thomson”) of Babst, Calland, Clements, and Zomnir, P.C.’s Response on behalf of Marcegaglia USA to DEP’s HSCA Section 503 Information Request.
January 29, 2004	Whittaker’s response to DEP’s HSCA Section 503 Information Request.
March 4, 2004	JMI’s response to DEP’s HSCA Section 503 Information Request. **
May 12, 2006	DEP letters, inviting Whittaker, and JMI, to a meeting to discuss HSCA liability and participation in response actions.
May 24, 2006	DEP letters (London, U.K. office and Wayne, PA office), inviting JMI to a meeting to discuss HSCA liability and participation in response actions.
August 29, 2006	DEP letter to Mr. Thomson, inviting Marcegaglia USA, Inc. to a meeting to discuss HSCA liability and participation in response actions.
October 10, 2006	DEP Follow-up letter to Mr. Thomson, inviting Marcegaglia USA, Inc. to a meeting to discuss HSCA liability and participation in response actions.

¹ Note: Appendix C & Appendix S (Attachments A & D) have not been uploaded due to their size. They are available to review in hard copy at the Southeast Regional Office and upon request

Bishop Tube Remedial Response
Administrative Record Docket

Part III. General Correspondence

<u>Date</u>	<u>Description</u>
<u>October 19, 2006</u>	Mr. Thomson's response on behalf of Marcegaglia USA, Inc.'s to DEP's October 10, 2006 letter.
<u>February 9, 2007</u>	DEP letter to George Pavia, Esq., ("Mr. Pavia") of Pavia & Harcourt, LLP, concerning Christiana Metals and an acknowledgement of phone call from Mr. Pavia and enclosed February 9, 2007 HSCA Section 503 Information Request from DEP to Christiana Metals.
<u>February 12, 2007</u>	Mr. Pavia's response to DEP's HSCA Section 503 Information Request, concerning Christiana Metals.
<u>April 17, 2007</u>	Mr. Donald W. Hedges' ("Mr. Hedges") response to DEP's April 4, 2007 HSCA Section 503 Information Request, concerning Christiana Metals.
<u>May 21, 2007</u>	Mr. Hedges' letter, providing further response DEP's HSCA Section 503 Information Request, concerning Christiana Metals.
<u>June 29, 2007</u>	DEP HSCA Section 503 Information Request to the Chester County Economic Development Council ("CCEDC") and Central and Western Chester County Industrial Development Authority ("CWCCIDA").
<u>July 25, 2007</u>	CWCCIDA response to DEP's HSCA Section 503 Information Request.
<u>January 30, 2008</u>	DEP HSCA Section 503 Information Request to Safety-Kleen, Inc.
<u>February 7, 2008</u>	DEP HSCA Section 503 Information Requests to Keith Hartman ("Mr. Hartman") and David Worst.
<u>February 14, 2008</u>	Mr. Hartman's response to DEP's HSCA Section 503 Information Request.
<u>February 15, 2008</u>	DEP letter to Mr. Thomson, regarding evidence of TCE purchase by Marcegaglia USA.
<u>February 27, 2008</u>	Safety-Kleen, Inc.'s response to DEP's HSCA Section 503 Information Request.
<u>March 10, 2008</u>	DEP HSCA Section 503 Information Request to C&W Mechanical Inc.
<u>March 18, 2008</u>	DEP HSCA Section 503 Information Request to Brenntag Northeast, Inc.
<u>March 24, 2008</u>	Mr. Thomson's letter to DEP, regarding Marcegaglia USA's liability.
<u>October 7 - 8, 2008</u>	Email exchange between DEP and East Whiteland Township, regarding treated groundwater discharge to the municipal sewer system.
<u>August 16, 2010</u>	DEP letters to Whittaker and JMI, regarding DEP's intent to initiate further operation of the interim remedial response soil and groundwater remediation system.

Bishop Tube Remedial Response
Administrative Record Docket

Part III. General Correspondence

<u>Date</u>	<u>Description</u>
<u>May 25, 2011</u>	DEP letter to Whittaker and JMI, regarding further implementation of the interim remedial action.
<u>September 25, 2012</u>	DEP letter to counsels for Whittaker and JMI, regarding further implementation of the interim remedial action.
<u>October 5, 2012</u>	Whittaker and JMI's joint response to DEP Letter, dated September 25, 2012 with their proposal to perform a treatability study.
<u>March 8, 2016</u>	DEP letter to Marcegaglia USA, Inc.'s counsel Mr. Thomson, regarding its February 15, 2008 letter.
<u>March 8, 2016</u>	DEP HSCA Section 503 Information Request to Christiana Metals.
<u>March 23, 2016</u>	Mr. Thomson's letter to DEP, regarding prior communications between Marcegaglia USA and DEP and Marcegaglia USA's prior use of trichlorethylene at the Bishop Tube Site.
<u>April 6, 2016</u>	U.S. Department of Health and Human Services, ATSDR letter to East Whiteland Township regarding the Health Consultation.
<u>May 31, 2016</u>	DEP letter to JMI and Whittaker, requesting preparation of a Feasibility Study.
<u>September 24, 2018</u>	DEP HSCA Section 503 Information Request to Liberty Mutual Insurance Company.
<u>October 19, 2018</u>	Resolute Management, Inc. (on behalf of Liberty Mutual Insurance Company) response to DEP's HSCA Section 503 Information Request (without enclosures).

Part IV. Notifications and Public Participation

<u>Date</u>	<u>Description</u>
<u>May 5, 2000</u>	DEP 35 P.S. § 6020.501(a) ("HSCA Section 501(a)") Notices sent to Alloy Steel Corporation, Christiana Metals Corp., Marcegaglia USA Damascus Division, Whittaker, and JMI.
<u>May 17, 2000</u>	Mr. Roeder's response to DEP's HSCA Section 501(a) Notice sent to Alloy Steel Corporation.
<u>April 9, 2005</u>	Notice of Settlement with CDP under HSCA and CERCLA, <i>PA Bulletin</i> , Volume 35, Number 15.
<u>September 5, 2007</u>	DEP <i>Response to Public Comments</i> .
<u>August 19, 2008</u>	DEP 35 P.S. § 6020.1113 ("HSCA Section 1113") Settlement Notices sent to Mr. Thomson. and Mr. Benjamin G. Stonelake, Esq.

Bishop Tube Remedial Response
Administrative Record Docket

Part IV. Notifications and Public Participation

<u>Date</u>	<u>Description</u>
August 30, 2008	Notice of Settlement with JMI under HSCA and CERCLA, <i>PA Bulletin</i> , Volume 38, Number 35.
August 22, 2009	Notice of Settlement with JMI and Whittaker under HSCA and CERCLA, <i>PA Bulletin</i> , Volume 39, Number 34.
March 9, 2010	DEP HSCA Section 501(a) Notice sent to CWCCIDA.
March 10, 2010	DEP 35 P.S. § 6020.502(c) (“HSCA Section 502(c)”) Pre-Listing Notices sent to JMI, Whittaker, Marcegaglia USA, and CWCCIDA.
March 16, 2010	DEP HSCA Section 502(c) Pre-Listing Notice sent to CDP.
September 11, 2010	Notice of Listing on the Pennsylvania Priority List of Hazardous Sites for Remedial Response; Hazardous Sites Cleanup Act. <i>PA Bulletin</i> , Volume. 40, Number 37.
October 11, 2010	<i>Written Comments on the September 11, 2010 Notice of Listing</i> , prepared by Saul Ewing LLP on behalf of JMI. **
October 12, 2010	<i>Roux Written Comments on the September 11, 2010 Notice of Listing</i> and the contents of the select documentation provided on CDRoms, compiled by Roux and Environmental Alliance . *
March 8, 2016	DEP HSCA Section 501(a) Notice to Christiana Metals.
September 23, 2021	DEP HSCA Section 506(b) Notice Letters sent to CDP, CWCCIDA, JMI, Whittaker, Marcegaglia USA, and Christiana Metals.
September 25, 2021	Notice of Proposed Remedial Response Language for publication in the <i>PA Bulletin</i> and <i>Daily Local News</i> .
November 6, 2021	Notice of Proposed Remedial Response (Comment Period Extension) published in the PA Bulletin and Daily Local News .
September 8, 2022	DEP <i>Response to Public Comments</i> , Part I , Part II , and Appendices .

Part V. Decisional and Investigation Response Documents

<u>Date</u>	<u>Description</u>
March 13, 2000	DEP <i>Response Justification Document – Bishop Tube Site</i> .
March 17, 2005	<i>Prospective Purchase Agreement</i> between the DEP and CDP.
September 5, 2007	DEP <i>Statement of Decision – Bishop Tube Site - Contaminant Source Area Remediation</i> .
August 18, 2008	<i>Consent Order and Agreement (“CO&A”)</i> between DEP and JMI. **

Bishop Tube Remedial Response
Administrative Record Docket

Part V. Decisional and Investigation Response Documents

<u>Date</u>	<u>Description</u>
<u>November 6, 2008</u>	DEP letter to Saul Ewing LLP, stating CO&A with JMI is final and effective. **
<u>August 4, 2009</u>	Amended CO&A between DEP, JMI, and Whittaker.
<u>October 23, 2009</u>	DEP letter to Blank Rome, LLP and Saul Ewing LLP, stating Amended CO&A with JMI and Whittaker. is final and effective.
<u>January 11, 2010</u>	DEP <i>SERO Pennsylvania Priority List Request Memo, Determination to List, and Site Summary.</i>
<u>February 1, 2010</u>	DEP <i>Authorization to Place Site on the Pennsylvania Priority List Memo</i> to K. Reisinger Acting Deputy Secretary for Waste, Air and Radiation Management and M. Sherman Deputy Secretary for Field Operations from G. Hartenstein, Chief Division of Remediation Services.
<u>April 26, 2019</u>	DEP <i>Bishop Tube Site Cost Recovery Report May 19, 2000 through April 1, 2019.</i>
<u>August 17, 2021</u>	DEP <i>Analysis of Alternatives and Proposed Response</i> for the Bishop Tube Site – Remedial Response Action.
<u>August 27, 2021</u>	DEP <i>Bishop Tube Site Cost Recovery Report April 2, 2019 through April 30, 2021.</i>
<u>September 12, 2022</u>	DEP <i>Statement of Decision</i> for the Bishop Tube Site – Remedial Response Action.

Part VI. References

The following information is incorporated into this administrative record by reference, in accordance with 25 PA Code Section 3.12(c).

U.S. Geological Survey. *Effect of Urbanization on the Water Resources of Eastern Chester County*, Pennsylvania. R. A. Slotto. 1987.

ARC View Web App <https://nrcs.maps.arcgis.com/apps/webappviewer/> .

USDA Soil Series Description and Classification <https://soilseries.sc.egov.usda.gov> .

ATSDR Toxicological Profiles A-Z <https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=173&tid=30> .

Part VI. References

COC	ATSDR Toxicological Profile
CVOCs	
TCE	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=172&toxid=30
1,1,1-TCA	https://wwwn.cdc.gov/TSP/substances/ToxSubstance.aspx?toxid=76
1,1,2-TCA	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=795&toxid=155
1,1-DCA	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=717&tid=129
1,1-DCE	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=721&tid=130
1,2-DCA	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=591&toxid=110
Carbon Tetrachloride	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=195&tid=35
Chloromethane	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=586&tid=109
Methylene Chloride	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=233&toxid=42
cis-1,2-DCE (same as trans-1,2-DCE)	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=463&tid=82
PCE	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=264&toxid=48
trans-1,2-DCE	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=463&tid=82
Vinyl Chloride	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=281&toxid=51
Other Organic Compounds	
1,2,4-Trimethylbenzene ¹	https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1037_summary.pdf
1,4-Dioxane	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=954&tid=199
Benzene	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=38&tid=14
Bromomethane	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=821&tid=160
MTBE	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=227&toxid=41
Inorganics	
Antimony	https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=332&tid=58
Arsenic	https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=22&tid=3
Cobalt	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=372&tid=64
Fluoride (Hydrogen Fluoride, Fluoride, and Fluorine)	https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=212&tid=38
Hexavalent Chromium	https://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=61&tid=17
Lead	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=93&toxid=22
Manganese	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=101&toxid=23
Nickel	https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=245&tid=44
Thallium	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=308&toxid=49
Vanadium	https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=275&toxid=50

¹ Information was unavailable on ATSDR's website. Information was obtained from EPA's Integrated Risk Information System website.

APPENDIX C
STATEMENT OF DECISION



SOUTHEAST REGIONAL OFFICE

HSCA Group

484.250.5960

**Commonwealth of Pennsylvania
Department of Environmental Protection
Hazardous Sites Cleanup Program**

**Bishop Tube
East Whiteland Township
Chester County**

STATEMENT OF DECISION

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1,1,1-TCA	1,1,1-trichloroethane
1,1,2-TCA	1,1,2-trichloroethane
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2,4-TMB	1,2,4-trimethylbenzene
1,2-DCA	1,2-Dichloroethane
AST	aboveground storage tank
AULs	activity and use limitations
HSCA 512 Order	Administrative Order issued pursuant section 512 of HSCA
ATSDR	Agency for Toxic Substances and Disease Registry
AS/SVE System	air sparging and soil vapor extraction remedial system
AOA	Analysis of Alternatives and Proposed Response
ARARs	Applicable, or Relevant and Appropriate Requirements
AOCs	areas of concern
Baker	Baker Environmental Inc
BMPs	best management practices
Site	Bishop Tube Site
BSTI	Brownfield Science & Technology, Inc.
CCHD	Chester County Health Department
CVOCs	Chlorinated Volatile Organic Compounds
Christiana Metals	Christiana Metals Corporation
cis-1,2-DCE	cis-1,2-dichloroethene
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COA	Consent Order and Agreement
CDP	Constitution Drive Partners, L.P
COC	contaminants of concern
DNAPL	dense non-aqueous phase liquids
DEP	Department of Environmental Protection
DHHS	Department of Health and Human Services
DSA	drum storage area
ECs	Environmental Covenants
EV	Exceptional Value
FS	Feasibility Study
ft msl	feet mean sea level
gpm	gallon per minute
GAC	granulated activated carbon

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GES	Groundwater and Environmental Services, Inc
HRS	Hazard Ranking System
HSCA	Hazardous Sites Cleanup Act
HAL	Health Advisory Level
HHRA	Human Health Risk Assessment
HC	Hydraulic Control
ISCO	In Situ Chemical Oxidation
ISCR	In Situ Chemical Reduction
ISTT	In Situ Thermal Treatment
ICs	institutional controls
IARC	International Agency for Research on Cancer
Johnson Matthey	Johnson Matthey, Inc.
Act 2	Land Recycling and Environmental Remediation Standards Act
The TGM	Land Recycling Program Technical Guidance Manual
LVC	Little Valley Creek
Marcegaglia	Marcegaglia USA, Inc.
MCL	maximum contaminant level
MSC	Medium-Specific Concentrations
MTBE	Methyl tert-butyl ether
µg/l	micrograms per liter
M	million
MNA	Monitored Natural Attenuation
MW	monitoring well
OUs	operable units
O&M	operation and maintenance
OM&M	Operations, maintenance, and monitoring
ppb	parts per billion
ppt	parts per trillion
PA	Pennsylvania
PADER	Pennsylvania Department of Environmental Resources
PNDI	Pennsylvania Natural Diversity Inventory
PAPL	Pennsylvania's Priority List of Hazardous Sites for Remedial Response
PFAS	per- and polyfluoroalkyl substances
PFB	perfluorobutane sulfonate
PFOS	perfluorooctane sulfonate
PFOA	perfluorooctanoic acid
POET	point of entry treatment system
PV	present value
PPA	Prospective Purchaser Agreement
RAOs	Remedial Action Objectives
RAs	remedial alternative technologies

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2020 RAA	Remedial Alternatives Analysis, dated August 2020
2021 RI	Remedial Investigation Report, dated January 2021
RI	Remedial Investigation
RDC	Residential Direct Contact
RUA	Residential Used Aquifer
RCRA	Resource Conservation and Recovery Act
Roux	Roux Associates, Inc
SDWA	Safe Drinking Water Act
2021 Investigation Memo	Soil Investigation for Certain Inorganic Constituents, Groundwater Investigation for VOCs and Certain Inorganic Constituents Memorandum, dated August 24, 2021
TEG	technical evaluation grant
2020 Tech Memo	Technical Memorandum, dated November 2020
PCE	tetrachloroethene
Source Property	the 13.7-acre former Bishop Tube property
TBC	To-Be-Considered
trans-1,2-DCE	trans-1,2-dichloroethylene
TS	Treatability Study
TCE	trichloroethene
UIC	Underground Injection Control
UECA	Uniform Environmental Covenants Act
EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VI	vapor intrusion
VOCs	Volatile Organic Compounds
Whittaker	Whittaker Corporation
WHO	World Health Organization
ZVI	zero-valent iron

I. INTRODUCTION

The Commonwealth of Pennsylvania (“PA”), Department of Environmental Protection (“DEP”) files this statement of the basis and purpose of its decision in accordance with Section 506(e) of the PA Hazardous Sites Cleanup Act (“HSCA”), Act of October 18, 1988, P.L. 756 No. 108, 35 P.S. § 6020.506(e).

The Bishop Tube Site (“Site”) consists of areas of groundwater, soil, and surface water contamination located in East Whiteland Township, Chester County. In September 2010, DEP added this Site to PA’s Priority List of Hazardous Sites for Remedial Response (“PAPL”). DEP is selecting a remedial response action at the Site to address soil, groundwater, surface water, and a residential drinking water supply that have been contaminated by Volatile Organic Compounds (“VOCs”), per- and polyfluoroalkyl substances (“PFAS”) and/or inorganic contaminants of concern (“COCs”). DEP plans to address contaminant source areas within unsaturated and saturated soils through addition of treatment reagents, coupled with in situ mixing; groundwater and surface water through in situ injection of reagent designed to chemically or biologically treat Site-related COCs, coupled with monitored natural attenuation, engineering controls, and institutional controls (“ICs”); and an impacted residential water supply through the connection to the existing public water supply waterline, combined with restrictions on the use of groundwater. This action is taken to protect human health, safety, and the environment.

II. SITE INFORMATION

A. SITE LOCATION AND DESCRIPTION

The Site is located in an area known as Frazer, East Whiteland Township, Chester County. Groundwater contamination at the Site affects properties located along South Malin Road, Lancaster Avenue (US Rt. 30), Conestoga Road (PA Rt. 401), Morehall Road (PA Rt. 29), and Village Way. The sources of the contaminated groundwater and surface water and areas of contaminated soil are located on the 13.7-acre former Bishop Tube property (“Source Property”), currently owned by Constitution Drive Partners, L.P. (“CDP”). The Source Property’s address is listed as 1 South Malin Road, Malvern, PA. The tax parcel is 42-4-321.2.

The United States Census estimated the population of East Whiteland Township to be 12,832 as of July 2019. According to East Whiteland Township’s website, the transient worker population in the Township is greater than the resident population. Land use in the area comprising the Site includes residential, recreational, commercial, and industrial (active and abandoned) activities. In 2014, East Whiteland Township rezoned the Source Property from industrial to residential use.

The Source Property is located near the base of the South Valley Hill, which rises to the south from Lancaster Avenue (Figure 1). Site elevation varies from 375 feet mean sea level (“ft msl”) at the northeast corner to 450 ft msl at the southwest corner of the Source Property. The Source Property is bordered by a vacant wooded lot and an active Amtrak rail line to the south and by a Norfolk Southern freight rail line to the immediate north; a bulk petroleum storage facility is

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located across South Malin Road to the west, and a residential area (General Warren Village) and undeveloped wooded area border the Source Property east of Little Valley Creek (“LVC”). In some reports this area of LVC is referred to as a “tributary” to LVC; Maps prepared by the United States Geological Survey (“USGS”) depict it to be the headwaters of LVC.

During construction of the former Bishop Tube industrial facilities on the Source Property, primarily in the 1950s, significant cutting and filling apparently occurred, resulting in three relatively level areas, occupied by parking areas, and two former manufacturing buildings (Plant 5 and Plant 8), separated by two man-made steep slopes. Driveways, parking lots, and loading areas consisted of asphalt or concrete¹ (Figure 2). An additional steep slope is located between the developed portion of the Source Property and LVC to the east.

LVC, which has an Exceptional Value (“EV”) water quality designation, passes through the affected area and forms the northern boundary of the Site from Lancaster Avenue to Morehall Road. LVC is a tributary to Valley Creek, which is a tributary to the Schuylkill River; a regional tributary river that flows into the Delaware River. Within the Site, LVC is shallow and flows through a populated, mixed commercial and residential area. Recreation is the most probable use of LVC.

LVC’s floodplain, riparian buffer areas, and adjacent wetlands are considered sensitive environments. These wetlands are also designated as EV and warrant special protection under DEP regulations. A PA Natural Diversity Inventory (“PNDI”) identified no habitats for endangered or threatened species on the Source Property.

The Site is located within the Piedmont Physiographic Province, which in southeast PA is represented by a northeast-southwest trending belt of rounded hills and relatively narrow valleys. The Site is situated along the southern side of one of these valleys, locally known as the Chester Valley, which is primarily comprised of Cambrian-Ordovician age carbonate rocks.

At the Site, groundwater moves in the bedrock through a network of naturally-occurring, interconnected, open channels known as fractures. Some of these fractures may be enlarged by naturally acidic groundwater moving through the bedrock. Where this process has been active in the fractured bedrock, the rate of groundwater movement may be high; elsewhere, the same rock type may exhibit lower rates of groundwater movement where there are smaller or fewer sets of fractures. At the Site, water in the fractured bedrock is generally under water-table conditions, but, under certain local conditions, may be confined (under pressure), causing springs to form.

According to Baker Environmental Inc, (“Baker”), who investigated the Site on behalf of DEP, between 2000 and 2008, the geologic horizons underlying the eastern section of the Source Property can be segregated into three categories: 1) a shallow soil/overburden interval; 2) a weathered bedrock interval; and 3) a deeper unweathered bedrock interval. The Conestoga Formation makes up the bedrock underlying the Site. The formation is composed of rocks known as calcium-rich phyllite and schist.

¹ These paved areas have experienced varying degrees of deterioration and disturbance over time.

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Wells drilled during the Site characterization activities revealed that the amount of calcium-rich material increases from south to north across the Site. Baker reported that the depth to bedrock varies from 3 to 24 feet spatially across the Source Property. In general, the depth to bedrock along the south sides of Plants 5 and 8 was found to be deeper than in the borings drilled within and along the north side of Plant 8. Baker attributed the variations to the grading activities associated with the construction of the plant buildings, as well as the natural differential weathering of the underlying rock materials. Information obtained while drilling deep wells on the Source Property indicates that steeply-dipping (approximately 80 degrees), structural features, (e.g. differential rock layers and fractures) exist in the bedrock, underlying the Source Property. Collectively, soil and lithology data from the characterization suggest that dense non-aqueous phase liquids (“DNAPL”) within the source areas have migrated from the overburden down into the bedrock, via these geological structures.

Water-bearing zones encountered during the investigation ranged in yield (estimated) from <1 gallon per minute (“gpm”) to >40 gpm. Generally, the number and productivity of water-bearing fractures were found to decrease with depth at the Site.

Baker reported that maps prepared by the Soil Conservation Service show that the Conestoga Series and the Manor Series occur on the Source Property. The Conestoga silt loam consists of level to gently sloping, deep and well-drained soils occurring in upland areas. The soils are believed to have formed from the weathering of calcareous schist/phyllite and micaceous limestone. At the Site, the soils belonging to the Conestoga silt loam series underlie areas adjacent to LVC along the eastern edge of the Source Property, and adjacent to the Norfolk Southern railroad tracks along the northern edge of the Source Property. The Manor loam consists of level to moderately sloping, shallow, and well-drained soils underlying upland areas. They are believed to have formed in materials weathered from schist and gneiss. Soils belonging to the Manor series underlie central portions of the Source Property, extending from South Malin Road to the eastern edge of LVC and from the Amtrak Railroad tracks to the Norfolk Southern railroad tracks north of the Source Property.

Silty clay and weathered schist fragments were observed in soil borings collected in the western and northern edges of Plant 8 and the eastern and southern edges of Plant 5. Soils borings collected from beneath Plant 5 and Plant 8 revealed sandy silt and silt clay and weathered schist fragments.

DEP considers the aquifer in the vicinity of the Site to be a used aquifer. Public water is available. One home located within the vicinity of the Site is supplied by a private well and was impacted. In 1999, Christiana Metals Corporation (“Christiana Metals”), a former owner/operator of Bishop Tube, installed a point of entry treatment system (“POET”) at this affected residence. There is no reported use of surface waters located at the Site as a source of drinking water.

B. SITE HISTORY

In 1951, J. Bishop Company started manufacturing operations involving precious metals processing in Plant 5. J. Bishop reportedly began using the Source Property for manufacturing

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steel tubes in the 1950s. The manufacture and processing of metal alloy tubes and associated equipment continued until 1999. Several companies conducted these operations at the Source Property during this period including Matthey Bishop, Incorporated, and Johnson Matthey, Inc. (“Johnson Matthey”) (successors to J. Bishop) (1951-1969), Whittaker Corporation (“Whittaker”) (1969 – 1974), Christiana Metals (1974 – 1988), Alloy Steel Corporation. (1988 – 1991), and Marcegaglia USA, Inc. (“Marcegaglia”) (1991 – 1999).

Tube production at the Bishop Tube facility on the Source Property concentrated primarily on seamless stainless-steel products for much of the period of operation. The processes included acid treatment and degreasing of the tubing. Hazardous substances were employed in the manufacturing processes throughout the history of manufacturing. Most notably chlorinated solvents, including trichloroethene (“TCE”), was utilized in the Plant 5 and Plant 8 vapor degreasers, processed in distillation units, and stored in drums and an aboveground storage tank (“AST”) which was not equipped with spill containment. During most periods of operation, Bishop Tube employed nitric and hydrofluoric acids to prepare and to remove impurities from the stainless-steel tubes for lubrication and redrawing after annealing, which involves using heat to increase the hardness and durability of the stainless steel. These steps were repeated with each successive redrawing until the desired tube diameter and wall thickness were achieved.

Johnson Matthey constructed Plant 5 in 1951. It consists of a one-story concrete block structure. Plant 5 was used for precious metals processing and stainless-steel tubing manufacturing. According to former Bishop Tube employees, large diameter stainless steel tubing manufacturing, including a large vapor degreaser, was relocated to Plant 8 after its construction, but small diameter tubing (capillary and hypodermic) manufacturing continued in Plant 5 until sometime in the 1980s. A smaller free-standing vapor degreaser (approximately 5’ L x 5’ W x 5’ H) was also used in Plant 5. Raw TCE was supplied to the Plant 5 operation in 55-gallon drums. Prior to Johnson Matthey’s construction of Plant 8, acid treatment occurred in a separate room, attached approximately at the center of the southern wall of Plant 5, known as the pickle house. Acid rinse wastes drained from the floor of the pickle house to a “cesspool” adjacent to and east of the Plant 5 pickle house.

A former metal frame storage shed (referred to as the ARMCO building in some reports), located east of Plant 5 and south of Plant 8 (when it was erected), believed to have been installed on the Source Property by Johnson Matthey in 1963, and used as a drum storage area (“DSA”) from that time until the mid-1990s. The ARMCO building was used to store raw (unused) and waste materials and hazardous substances in drums. Bulk hydrofluoric and nitric acid were stored in large ASTs immediately east of the drum storage shed.

Plant 8 is a two-story steel frame structure built by Johnson Matthey in 1958. After its construction, larger diameter stainless steel tubing manufacturing was moved from Plant 5 to Plant 8 and increased in size. A 40-foot-long vapor degreaser (approximately 40’ L x 4’ W x 10’ H) was located within an unlined², concrete subfloor pit or vault in the western portion of Plant 8. From 1958 to 1974, during Johnson Matthey’s ownership and then during Whittaker’s ownership, the Plant 8 vapor degreaser was supplied with chlorinated solvents from 55-gallon

² When referring to the word “unlined” DEP is referring to a coating or a liner that would have been capable of resisting permeation of TCE or other chlorinated solvents used in and released from the vapor degreaser.

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drums. Starting in approximately 1975, Christiana Metals supplied the Plant 8 degreaser with solvents from a 4,000-gallon AST through subfloor piping, which primarily contained TCE. 1,1,1-trichloroethane (“1,1,1-TCA”) was also reportedly used as a degreasing solvent for a period during Christiana Metals’ operation. According to former Bishop Tube employees, solvent spills and leaks occurred in and near the Plant 8 vapor degreaser pit, at the AST, and waste solvents and materials were disposed of outside of the two buildings. All pickle house operations were relocated to the eastern portion of Plant 8 after its construction.

Acid rinse water handling and disposal areas include the transfer pit and associated spill area immediately east of Plant 8 and the cesspool area located adjacent to Plant 5. Acid rinse wastes were transferred from the Plant 8 pickle house via a series of pits and pumps to the cesspool for subsurface disposal until the mid-1970s. According to former Bishop Tube employees and inspection reports, prepared by the PA Department of Environmental Resources (“PADER”), now DEP, acid rinse wastes were discharged from a transfer pit located immediately east of Plant 8 across the ground surface into LVC.

PADER detected fluoride in surface water samples collected from LVC in the early-1970s. Fluoride was traced to a 12-inch diameter pipe leading from the Bishop Tube facility. The source of the elevated fluoride was determined to be non-contact cooling water obtained from two wells on the Source Property. The two production wells were located east and west of the cesspool. Water was pumped from the production wells to a storage reservoir on the hillside, south of the employee parking area. Water pumped from the wells and stored in the reservoir was held for emergency fire suppression and used to supply acid rinse baths and non-contact cooling water. Samples from the non-contact cooling water source (i.e., reservoir) contained elevated concentrations of fluoride. PADER’s Bureau of Water Quality prompted, then operator, Christiana Metals to close the transfer pit and cesspool and to initiate a hydrogeologic investigation. In 1983, PADER noted violations of waste management regulations involving containment and housekeeping practices. Floor drains were also observed during PADER and DEP inspections in both Plants. Marcegaglia closed the final floor drain (in Plant 5) in 1999.

A June 1981, leak of nitric and hydrofluoric acid from ASTs caused the evacuation of approximately 500 residents from the nearby General Warren Village.

In June 1984, NUS Corporation performed a site inspection at the Source Property on behalf of the United States Environmental Protection Agency (“EPA”). The investigation included the sampling of four monitoring wells that were installed in 1981 as part of a hydrogeologic study conducted at the Source Property by Betz, Converse, Murdock Inc. on behalf of Christiana Metals. TCE ranging from 4,800 - 20,120 micrograms per liter (“µg/l”) or parts per billion (“ppb”) was found in three of the four monitoring wells. TCE was found in a surface water swale at 2,026 ppb. Other contaminants detected in the monitoring wells and the swale include 1,1,1-TCA, 1,1-dichloroethane (“1,1-DCA”), 1,1-dichloroethene (“1,1-DCE”), trans-1,2-dichloroethylene (“trans-1,2-DCE”), and tetrachloroethene (“PCE”). This was the first sample event known to DEP that included any analysis of VOCs.

In 1987, manufacturing operations temporarily ceased. Comments from a PADER inspection, performed under the Federal Resource Conservation and Recovery Act (“RCRA”) on June 15,

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1988, indicated that RCRA closure actions had been completed. In 1991, the New Bishop Tube Company, formed by Marcegaglia, purchased machinery and equipment from Christiana Metals, and, under a lease arrangement, began its renovations and retrofitting of the facility, including disturbance and relocation of soils at the Source Property, and resumed operations of the facility for tube fabrication. While initiating operation of the facility, Marcegaglia arranged for removal of the TCE AST in July 1992, and later disposal of drums (including some that were reportedly leaking) found in the DSA between 1994-1995. In 1993, Marcegaglia purchased at least one 55-gallon drum of TCE, which it used in its operations. In 1994, a break in a water line in Plant 8 caused tens of thousands of gallons of water to flood inside and around Plant 8, in areas impacted by releases of hazardous substances in soils and groundwater. The New Bishop Company later changed its name to Damascus-Bishop Tube Company. Christiana Metals continued its investigation activities after operations transitioned to Marcegaglia.

In 1999, Marcegaglia ceased operations at the Source Property, and, at the same time, Christiana Metals informed DEP that voluntary actions to investigate and remediate the Site would cease. At this time, the Source Property was abandoned. The Source Property was subsequently acquired by the Central and Western Chester County Industrial Development Authority for potential redevelopment and sold the Source Property to CDP in 2005 for purposes of redevelopment.

In March 2000, DEP signed the Response Justification Document for the Site. DEP hired Baker to perform site investigations, utilizing a phased approach. Between 2000 and 2008, their activities revealed the following:

- Three soil hotspots;
- Source Property groundwater was contaminated by TCE and other chlorinated solvents in deep and shallow aquifers;
- Evidence of free product in groundwater on the Source Property;
- Source Property stream discharge of contaminated groundwater;
- Confirmed off-site migration of contaminated groundwater; and
- Full extent of the contamination was not known.

Under the terms of a 2005 Prospective Purchaser Agreement (“PPA”) which DEP and CDP executed prior to the recordation of the deed transfer of the Source Property to CDP, CDP agreed, in part, to (1) assess and/or clean up soil contamination at the Source Property to a non-residential Statewide health standard or a site-specific standard, as set forth in the Land Recycling and Environmental Remediation Standards Act (“Act 2”), in accordance with a work plan created by CDP; (2) not to exacerbate any existing contamination at the Source Property; (3) not to interfere with or impair any response action taken by DEP; and (4) to provide access and right of entry to DEP for potential response actions in exchange, in part, for a covenant not to sue and contribution protection from DEP.

In 2006, DEP selected a Prompt Interim Response of installing an air sparging and soil vapor extraction remedial system (“AS/SVE System”) to address TCE contaminated soil (unsaturated) in three source areas on the Source Property. DEP issued the Statement of Decision for the Prompt Interim Response in September 2007. In 2007, CDP designed and provided mechanical

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equipment for the installation and operation of the AS/SVE system. DEP's contractor (Weston Solutions) completed system installation in October 2007. CDP undertook the system performance demonstration from February to April 2008. While the system removed some COCs, primarily VOCs, it failed to meet some of the performance requirements.

In October 2008, DEP entered into a Consent Order and Agreement ("COA") with Johnson Matthey. Pursuant to the terms of the COA, Johnson Matthey would conduct an environmental investigation, intended to (1) characterize the following: (a) groundwater contamination contained within the bedrock originating from the Source Property; (b) contaminated groundwater contained within the overburden (i.e. above the bedrock zone) originating from the Source Property and occurring on properties down-gradient from the Source Property; (c) potential vapor intrusion ("VI") pathways resulting from migration of contaminants from the Source Property; and (d) potential groundwater to surface water pathways to determine whether, and, if so, where contaminated groundwater, resulting from the Source Property, may be entering LVC or other surface water features; (2) perform a Risk Assessment; and (3) develop a Feasibility Study (if necessary). Johnson Matthey hired Roux Associates, Inc. ("Roux") to perform the remedial investigation activities. On August 4, 2009, DEP, Johnson Matthey, and Whittaker amended the COA to include Whittaker (another former owner/operator) to the agreement.

DEP facilitated future remedial response action(s), as defined in Section 103 of HSCA, 35 P.S. § 6020.103, by placing the Site on the PAPL on September 11, 2010. The PAPL listing allowed DEP to consider response actions which would cost more than \$2 million ("M") and/or take longer than one year to complete and provided the local municipality, East Whiteland Township, with the opportunity to seek a technical evaluation grant ("TEG") to evaluate DEP's proposed remedial response action. DEP formally entered into a TEG agreement with East Whiteland Township authorizing expenditure of up to \$50,000 on July 12, 2018. East Whiteland Township utilized the TEG funding to hire Brownfield Science & Technology, Inc. ("BSTI") to evaluate DEP's proposed remedial response action during the public comment period. East Whiteland Township has received reimbursement for \$50,000 of the expenses that it incurred from BSTI's evaluation.

From 2009 to the present, on behalf of Johnson Matthey and Whittaker, Roux has performed a multi-phased Remedial Investigation ("RI"), a Treatability Study ("TS"), and a Feasibility Study ("FS") for groundwater contamination at the Site. The RI focused on defining the full extent of groundwater contamination northeast of the Source Property; evaluating current and potential risks resulting from Site-related COCs identified in surface water; characterizing current and potential future VI into occupied structures within the Site (including associated human health risks); and supplementing prior Source Property investigations performed by DEP. Roux reported results of the RI work in three RI Reports dated December 2010, August 2015, and January 2021 ("2021 RI"). The 2021 RI conclusions included the following: (1) no current, unacceptable risks result from conditions at the Site; (2) potential future risks to human health may result from future groundwater use and/or construction of new or modification of existing structures within the Site (as delineated in the RI); (3) soils at the Source Property contain inorganic and organic COCs at levels exceeding DEP's numeric cleanup standards; and (4)

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surface water within the EV LVC contains Site-related COCs, resulting from diffuse groundwater discharge.

The TS was initiated with a bench-scale test in 2012, followed by a field-scale test to evaluate the efficacy of enhanced reductive dechlorination/in situ bioremediation. The TS Completion Report, dated October 2015, concluded that amendments introduced into the target zone were not well distributed to the compacted saturated soils, but were distributed primarily to the weathered/shallow bedrock zone. Additionally, favorable geochemical conditions and sufficient populations of dechlorinating bacteria were not present in baseline samples or sustained in the target treatment zone during the field-scale test. A hydraulic evaluation performed during injection activities revealed downward transport of amendments from the overburden (target zone) into weathered/shallow and competent (deeper) bedrock zones.

DEP formally requested preparation of an FS in a letter dated May 31, 2016. The resulting FS Report, submitted by Roux in January 2021, screened and evaluated remedial options and technologies for addressing Site-related impacts to shallow, intermediate, and deep groundwater beneath the Site, DNAPL, and LVC. After the initial screening, retained options were evaluated with respect to short-term and long-term effectiveness, compliance with Applicable, or Relevant and Appropriate Requirements (“ARARs”), implementability, and cost effectiveness. The FS report did not evaluate options for addressing Site-related contamination in soils on the Source Property.

Initially, to evaluate options for addressing only unsaturated soils, DEP tasked Groundwater and Environmental Services, Inc. (“GES”) with preparing a Remedial Alternatives Analysis (“2020 RAA”) for unsaturated soils. The 2020 RAA, dated August 2020, evaluated excavation with offsite disposal, excavation with onsite treatment, in situ stabilization, in situ chemical oxidation or reduction via soil mixing, surface barrier (capping), and engineering/ICs. At DEP’s request, GES supplemented the 2020 RAA with a November 2020 Technical Memorandum (“2020 Tech Memo”) to evaluate four technologies capable of simultaneously addressing contaminated unsaturated and saturated soils on the Source Property.

In December 2020, Roux provided a report, summarizing additional, limited soil investigation activities in Plant 5. The objectives of the investigation were to assess the horizontal and vertical extent of VOCs and to assess whether hexavalent chromium is present in a railing spill area located in a courtyard between Plants 5 and 8. Roux also provided DEP with an FS Addendum, in which it, on behalf of Johnson Matthey and Whittaker, evaluated an eighth remedial alternative to integrate a remedial alternative for soil and groundwater source area mitigation with the FS alternatives for groundwater.

In May 2021, Roux installed 20 soil borings within 5 areas of concern (“AOCs”), identified in the 2020 Tech Memo. These areas were associated with acid-handling and disposal on the Source Property and were originally included, based on total chromium analytical results. The results are summarized in Roux’s Soil Investigation for Certain Inorganic Constituents, Groundwater Investigation for VOCs and Certain Inorganic Constituents Memorandum, dated August 24, 2021, (“2021 Investigation Memo”), which was incorporated as part of the administrative record for the Site.

On November 20, 2021, PA promulgated Statewide health standards for three PFAS (perfluorobutane sulfonate (“PFBS”), perfluorooctane sulfonate (“PFOS”), and Perfluorooctanoic acid (“PFOA”) under Act 2. In March 2022, Roux collected samples from the surface water and groundwater on the Source Property for the 3 PFAS. DEP placed the PFAS Sampling Results, dated April 1, 2022, on DEP’s website for the Site shortly after their receipt.

C. RELEASE OF HAZARDOUS SUBSTANCES

IDENTIFIED COCS/HAZARDOUS SUBSTANCES

Table 1 below summarizes the COCs identified in the 2021 RI. The COCs identified are “hazardous substances,” pursuant to Section 103 of HSCA, 35 P.S. §6020.103. All are designated as a hazardous substance pursuant to the Federal Superfund Act, officially titled the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. § 9601 et seq. The presence of these hazardous substances in soil, groundwater, and surface water constitute a “release” and “threatened release” of hazardous substances at the Site, as those terms are used in Section 505 of HSCA, 35 P.S. §6020.505.

Table 1: COCs that are Hazardous Substances

COC	Affected Media
Chlorinated Volatile Organic Compounds (“CVOCs”)	
TCE	Soil, Groundwater, Surface water
1,1,1-TCA	Soil, Groundwater, Surface water
1,1,2-Trichloroethane (“1,1,2-TCA”)	Soil, <i>Groundwater</i> ³
1,1-DCA	<i>Groundwater</i>
1,1-DCE	Soil
1,2-Dichloroethane (“1,2-DCA”)	<i>Groundwater</i>
Carbon Tetrachloride	<i>Groundwater</i>
Chloromethane	<i>Groundwater</i>
cis-1,2-Dichloroethene (“cis-1,2-DCE”)	Soil, Groundwater, Surface water
Methylene Chloride	<i>Groundwater</i>
PCE	Soil, Groundwater
trans-1,2-DCE	<i>Groundwater</i>
Vinyl Chloride	Soil, Groundwater
Other Organic Compounds	
1,2,4-Trimethylbenzene (“1,2,4-TMB”)	<i>Groundwater</i>
1,4-Dioxane	<i>Groundwater</i>
Benzene	<i>Groundwater</i>
Bromomethane	<i>Groundwater</i>
Methyl tert-butyl ether (“MTBE”)	<i>Groundwater</i>

³ ‘Groundwater’ is italicized for certain CVOCs and other organic compounds, above, that Roux has disputed that their detections in groundwater samples are related to releases at the Site.

COC	Affected Media
Inorganics	
Antimony	Soil
Arsenic	Soil
Cobalt	Soil
Hexavalent Chromium	Groundwater, Surface water
Lead	Soil
Manganese	Soil, Groundwater
Nickel	Soil, Groundwater, Surface water
Thallium	Soil
Total Chromium	Groundwater, Surface water
Vanadium	Soil

Fluoride is a “contaminant” as that term is defined by Section 103 of HSCA, 35 P.S. § 6021.103, and Section 9601 of CERCLA, 42 U.S.C.A. § 9601. Fluoride is a component of hydrofluoric acid, which was used in the tube-making process and released at the Site. Hydrofluoric acid is a hazardous substance. Fluoride is also identified as a COC in soil, groundwater, and surface water.

PFOA is also a “contaminant” as defined by Section 103 of HSCA, 35 P.S. § 6021.103, and Section 9601 of CERCLA, 42 U.S.C.A. § 9601. PFOA is a COC in groundwater and surface water. Additional soils analysis will be required during pre-design characterization to evaluate the presence and distribution of PFAS in soil.

IMPACTED MEDIA: SOILS

The source areas on the Source Property for CVOCs and inorganic hazardous substances are detailed below and depicted in Figure 3. The hazardous substances that were detected in soil were compared to DEP’s Act 2 Standards as follows:

- Residential Direct Contact (“RDC”) Medium-Specific Concentrations (“MSC”) for soil (0-15 feet)
- Residential Used Aquifer (“RUA”) (total dissolved solids <2500 milligrams per liter) Soil-to-Groundwater MSCs for soil.

Soil source areas (CVOCs)

CVOC soil contamination has been identified in three main AOCs, associated with specific historic manufacturing operations of Bishop Tube. Chlorinated solvents were used for degreasing metals in Plants 5 and 8 and were stored in an AST located along the north wall outside of Plant 8. Hazardous substances detected above DEP’s Act 2 Standards for soil in these areas include TCE, PCE, 1,1,2-TCA, 1,1,1-TCA, cis-1,2-DCE, 1,1-DCE, and vinyl chloride. Chlorinated solvents have also been identified in soils underlying the DSA, described above. Based on its extent within each of the three main source areas, TCE is considered the primary CVOC in soil and may be used to define the extent of CVOCs in each area. Maximum TCE concentrations in each area are 35.2, 10,754, and 4,179 mg/kg in the Plant 5, Plant 8 and DSA

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source areas respectively. The more stringent Act 2 Standard for TCE is 0.5 mg/kg (RUA Soil-to-Groundwater MSC).

In addition to the three main AOCs, chlorinated solvents were detected at levels exceeding Act 2 Standards in soils in other isolated areas of the Source Property. Based on information from former Bishop Tube employees, small quantities of chlorinated solvents were routinely discarded outside of the buildings. Figure 3 depicts the three main source areas and isolated areas of CVOC soil contamination which exceed the Act 2 Soil-to-Groundwater MSC.

PFAS concentrations in soil are not known, but due to its presence in groundwater, PFAS analysis will be incorporated into the pre-design soil investigation.

Soil source areas (Inorganics)

Inorganic contaminants, including total chromium and nickel, have been detected in soil at levels, exceeding Act 2 Standards, in known acid rinse water handling AOCs. At the time when the Analysis of Alternatives and Proposed Response (“AOA”) was prepared, only limited soil analytical data was available for hexavalent chromium in soil. Consequently, to provide for the most protective evaluation in the AOA, total chromium results were compared to the cleanup standard for hexavalent chromium. In May 2021, hexavalent chromium was not detected above residential Act 2 Standards. Additional hexavalent chromium analysis will be performed after remediation to ensure there are no exceedances of residential Act 2 Standards throughout the soil profile.

In May 2021, fluoride was detected above its Act 2 Soil-to-Groundwater MSC in 10 of the borings located within 4 AOCs identified by GES. These areas were associated with acid-handling and disposal on the Source Property and were originally included based on total chromium analytical results. Additional pre-design investigation will be needed to fully delineate areas requiring remediation.

In addition to nickel and fluoride in acid rinse water handling AOCs, cobalt, manganese, thallium, and lead, exceeding Act 2 Standards, have been identified in isolated areas of the Source Property.

Other inorganic contaminants, including arsenic and vanadium, are more widespread in soils but are likely attributable to natural occurring conditions. Pre-remedial design phase sampling may be performed to confirm whether this naturally occurring condition exists for any of these contaminants, which, if confirmed, would not be subject to remediation under HSCA.

IMPACTED MEDIA: GROUNDWATER

The source areas for CVOCs, other organic compounds, and inorganic hazardous substances in groundwater are detailed below. The hazardous substances that were detected in groundwater were compared to DEP’s Act 2 Standards -- specifically the RUA MSCs for groundwater.

Source area groundwater (CVOCs)

Groundwater within the saturated soils and bedrock below and downgradient from the vapor degreaser areas in Plant 5 and Plant 8 and the DSA contains the chlorinated solvents TCE, PCE, and 1,1,1-TCA which were used at the facility and breakdown products, including cis-1,2-DCE, 1,1-DCE, 1,2-DCA, and vinyl chloride, exceeding Act 2 Standards for groundwater. Upgradient wells located south and west of the manufacturing areas do not contain these compounds. Samples collected in 2018 from bedrock monitoring wells on and immediately downgradient from the Source Property contained TCE at levels exceeding 150,000 µg/l. Groundwater samples collected from overburden and bedrock monitoring wells located within the Plant 8 AOC contained TCE in excess of 200,000 µg/l. A bedrock monitoring well sample from within the DSA contained TCE exceeding 90,000 µg/l. Groundwater samples from wells within the Plant 5 AOC contained much lower TCE concentrations, ranging up to approximately 50 µg/l and suggesting that the saturated soil and bedrock in this AOC are not currently major contributors to the dissolved CVOC plume. DEP's Act 2 Standard for TCE is 5 µg/l. Based on its extent and concentration in groundwater, DEP considers TCE to define the limits of chlorinated solvent contamination in Site groundwater (including on the Source Property). Groundwater contamination beyond the Source Property and the interaction of contaminated groundwater with LVC are discussed below.

In the 2021 RI, Roux disputes the inclusion of certain CVOCs as groundwater COCs: 1,1,2-TCA, 1,2-DCA, carbon tetrachloride, chloromethane, and trans-1,2-DCE. The bases for its disputes are (1) that those COCs exceeded the Act 2 Standard in two or fewer monitoring wells and (2) Methylene chloride detections are thought to be (and commonly is) related to laboratory contamination. DEP considers these compounds to be COCs at the Site and will evaluate pre-design investigation results to determine if specific design components are needed to address these COCs.

Source area groundwater (Other Organic Compounds)

In March 2022, Roux collected samples from 16 monitoring wells on the Source Property for analysis of PFAS⁴. PFOA was detected at concentrations ranging from 2.58 parts per trillion ("ppt") to 142 ppt. PFOA exceeded PA's proposed maximum contaminant level ("MCL") in 14 of 16 wells sampled. No samples exceeded the proposed MCL for PFOS. No samples exceeded the current Health Advisory Level ("HAL") or Act 2 Standard for PFBS. The precise manufacturing operation or source responsible for the PFOA detections in groundwater has not been identified. Review of the available data suggests that higher concentrations are present in the vicinity of the former vapor degreasers. The source of PFOA is unknown at the Site. Additional pre-design groundwater sampling of PFAS will be needed.

Five other organic compounds are listed above as groundwater COCs at the Site. Roux disputes the inclusion of the following organic compounds in the 2021 RI: 1,2,4-TMB, benzene,

⁴ EPA has issued Health Advisories for certain PFAS and is in the process of developing MCLs under the Safe Drinking Water Act ("SDWA") for PFOA and PFOS. Furthermore, DEP has proposed MCLs for PFOA and PFOS, which are To-Be-Considered criteria ("TBCs") for purposes of selecting response actions at the Site; and these proposed MCLs may be promulgated in the near future. The response action is expected to achieve protection with respect to all unacceptable human health risks posed by PFAS constituents. DEP will consider DEP or Federal MCLs or Health Advisories for PFAS constituents as ARARs or TBCs, respectively, as appropriate, when one or more of these standards is promulgated or finalized.

1,4-dioxane, bromomethane and MTBE. The justifications for this dispute are that (1) Roux detected these organic COCs above their respective Act 2 Standards in two or fewer wells and (2) Roux considers an upgradient source (i.e., bulk fuel storage facility) to be responsible for the MTBE detections. Consistent with the CVOCs COCs disputed in the 2021 RI, DEP considers these compounds to be COCs. Pre-design sampling **will** be needed.

Source area groundwater (inorganics) on the Source Property

Total chromium and nickel concentrations, exceeding Act 2 Standards (100 µg/l in both cases), have been detected in overburden and shallow bedrock monitoring well samples within and/or downgradient from acid rinse water handling AOCs. Fluoride has also been detected above Act 2 Standards in similar areas associated with acid use at the Source Property. The presence of fluoride in Site groundwater is attributed to Bishop Tube's use of hydrofluoric acid to remove surface impurities (scale) during stainless steel tube processing.

Sulfide exceeded its groundwater MSC in seven wells sampled by Roux during the RI activities. Sulfide can be produced by a bacterial transformation of naturally occurring sulfate under certain anaerobic conditions. In the 2021 RI, Roux disputed inclusion of sulfide as a COC, arguing that it was only detected at these locations in a single sampling event. Pre-design investigation activities will include sulfide analysis to determine its presence and the need to address it in the remedial design.

These inorganic contaminants in groundwater appear to be confined within the Source Property, but some additional pre-remedial design phase monitoring well sampling will be necessary to confirm. The interaction of contaminated groundwater with LVC is discussed below.

Downgradient groundwater (Offsite Plume)

CVOC contamination in groundwater as defined by TCE concentrations exceeding the Act 2 Standard (5 µg/l) has been characterized through a combination of groundwater monitoring data and fate and transport modelling presented in the 2021 RI. Groundwater downgradient from the Source Property has not been analyzed for PFAS. As noted above inorganic COCs appear to be limited to areas within the Source Property; however, additional groundwater monitoring and analysis will be necessary to confirm current concentrations.

1,1,1-TCA, PCE, and TCE used and released at the Source Property and daughter/breakdown products associated with these parent compounds are present at levels exceeding Act 2 Standards north and east of the Source Property. Groundwater flow and contaminant transport at the Site are controlled by the orientation of bedrock fractures and joints. An apparent cross cutting fracture which is believed to account for the location of LVC on the Source Property acts as a discharge zone and appears to direct contaminant transport to the north across Lancaster Avenue, where the stream and groundwater flow turn in a more easterly direction. It should be noted that the cross-cutting fracture zone may not intercept all contaminants transported to the east, and additional groundwater delineation is necessary to evaluate contaminant transport in the northeast portion of the Source Property. Beyond Lancaster Avenue, monitoring wells installed north of LVC do not contain Site-related COCs above Act 2 Standards. This suggests that in this downgradient area, LVC acts as the northern Site boundary. Empirical data and contaminant fate and transport modeling show that TCE at levels exceeding Act 2 Standards has migrated

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approximately 3,500 feet east northeast of the Source Property, beyond monitoring well MW-84 located on a commercial property on the west side of Morehall Road (PA Route 29). The extent of the Site, as defined by the TCE contaminant plume, is shown on Figure 4.

In 1999, at the request of DEP, Christiana Metals installed a POET on the water supply of a contaminated home well, which contained TCE at a concentration of 53 µg/l. The POET consists of a dual canister whole-house granulated activated carbon (“GAC”) filter system and is equipped with an ultraviolet light for disinfection. Sampling performed by a consultant working for Christiana Metals confirmed the effectiveness of the treatment system. DEP has periodically sampled and maintained the GAC filter, sometimes with the assistance of two former owners/operators of Bishop Tube (Johnson Matthey and Whittaker). Pre-treatment samples collected in 2017 contained TCE at 5.88 µg/l. Subsequent to the 2017 sampling, the property had been unoccupied, but in 2019 it was purchased. DEP has identified the existence of the POET with the new owner, while trying to arrange for the sampling of that well. The new owner has indicated an intention to use the home as a residence after renovations are completed.

IMPACTED MEDIA: SURFACE WATER/STREAM

LVC flows in a northerly direction across the eastern portion of the source property. This headwater stretch of LVC is a small stream. Baseflow measurements collected by Roux during their RI activities ranged from 49 to 354 gallons per minute as measured upstream (near the Amtrak railroad crossing) and downstream (just north of Lancaster Avenue), respectively. Based upon these measurements, LVC is considered to be a gaining stream on the Source Property. This means that groundwater is discharging to the stream in this stretch. Concurrent monitoring well and stream sampling data suggest that 1,1,1-TCA, TCE, cis-1,2-DCE, total chromium, hexavalent chromium, nickel, and fluoride are entering LVC via diffuse discharge of contaminated groundwater from the Source Property to the stream in the same stretch. In addition, any ongoing discharge to the waters of the Commonwealth would be a public nuisance, pursuant to Section 401 of the Clean Streams Law, 35 P.S. § 691.401.

During periods of manufacturing operations at the Source Property, fluoride was detected in LVC above Chapter 93 water quality standards. During the HSCA investigation, no analysis of surface water samples found fluoride at levels that exceeded Chapter 93 standards, however, the analytical data demonstrates that the highest fluoride concentrations in LVC occur near areas where documented spills of raw acids and acid rinse water occurred on the Source Property.

The following table summarizes results of an evaluation of the groundwater discharge to surface water presented in the 2021 RI. Sample results presented in the table were collected during dry weather conditions in an effort to avoid collecting stream samples comprised of surface runoff from precipitation. Roux collected 5 samples from LVC between the Amtrak rail line south, upstream of the Source Property and a location just north of the Norfolk Southern rail line, downstream of the Source Property, see Figure 5.

Table 2: Summary of LVC Sample Results for Surface Water COCs

	Upstream Result (from SW-1 or SW-2)	Maximum Result (from SW-3, 4, or 5)	Chapter 93 Standard
TCE	ND (<1)	7.3	0.6
1,1,1-TCA	ND (<1)	1.2	610
cis-1,2-DCE	ND (<1)	4.7	12
Fluoride	51	1200	2000
Hexavalent Chromium	0.1	22.5	11
Nickel*	ND (<2)	38.16	52
Total Chromium	7.4	22.7	None
<i>All samples are reported in µg/l</i> <i>All maximum results are from locations proximate to/or downstream from source areas</i> <i>Metals results are for dissolved metals</i> <i>Bold indicates Chapter 93 exceedance</i> <i>*at Hardness of 100</i>			

The 2021 RI evaluated COCs detected in LVC by presenting concurrently collected groundwater analytical data. The surface water COCs in Table 2 were detected in groundwater samples near LVC and increased along and just downstream of soil source areas on the Source Property. The 2021 RI concludes that this stretch of LVC is a gaining stream, meaning that groundwater is discharging along and just downstream from these source areas. The increasing COC concentrations identified along and just downstream from the source areas are attributed to groundwater discharge to LVC. A human health and an ecological risk assessment are presented in the 2021 RI and conclude that no unacceptable risks currently result from the COC concentrations identified in LVC, based on current human and ecological exposure pathways.

Surface water samples for PFAS analysis, included three samples from LVC and one sample from a drainage swale located between the Source Property and the Norfolk Southern rail line. The highest PFOA concentration was detected in the drainage swale, which enters LVC near the northeast corner of the Source Property. While no surface water sample exceeded the current Act 2 Standards, PFOA is present in groundwater near LVC, and concentrations increase as LVC flows past the former manufacturing and documented COC release areas of the Source Property. Therefore, PFOA has been added to the list of COCs in surface water.

As noted above, LVC is classified as an EV stream by DEP. This designation subjects LVC to special protections, including anti-degradation requirements discussed in Section V, below.

RISK EVALUATION

In 2008, the Agency for Toxic Substances and Disease Registry (“ATSDR”) completed a Health Consultation for the Site. At that time, ATSDR identified three completed exposure pathways and three potential exposure pathways. The potential exposure pathways included “incidental ingestion of groundwater from residential taps,” “inhalation of vapors from contaminated spring water inside a residential dwelling and a spring house,” and “inhalation of vapors migrating into dwellings from underlying contaminated groundwater or soils.”

The Human Health Risk Assessment (“HHRA”) presented in the 2021 RI evaluated current and potential future exposure risks at the Site. The HHRA concludes that there are no current unacceptable exposure risks at the Site, based on the results of the surface water risk assessment and a lack of open exposure pathways, such as untreated drinking water supplies and VI into occupied structures (based on evaluation of indoor air quality data collected during the RI).

Potential future risks exceeding cancer and noncancer risk criteria were identified in the 2021 RI, related to consumption of groundwater and VI associated with Site groundwater. Risks associated with consumption of groundwater could occur in the future if any drinking water supply wells are installed within the Site boundary. Calculated risks associated with VI resulting from groundwater presented in the 2021 RI are largely driven by the TCE concentrations identified in monitoring wells. Additionally, evaluation of groundwater analytical data from Site monitoring wells revealed potential future VI risks if existing structures are modified or if new structures are constructed within the Site boundary as identified in Figure 4.

ATSDR’s Toxic Substance Portal was referenced for information related to the threat to human health posed by each COC, if there is human exposure. This information is summarized in Appendix A.

PRIMARY COC

In summary, TCE is considered the primary Site-related COC because its concentrations within soil, groundwater, and surface water are generally higher than other COCs, including TCE degradation products, such as cis-1,2-DCE and vinyl chloride. Additionally, TCE has migrated further in groundwater than the other COCs released at the Site. The 2021 RI establishes the Site boundary based on TCE concentrations in groundwater. Since a public water supply is available within the entire Site boundary, VI is anticipated to be the most significant exposure pathway. Calculated risks associated with VI resulting from groundwater presented in the 2021 RI are largely driven by the TCE concentrations identified in monitoring wells. Potential routes of exposure on the Source Property include trespasser and construction worker direct contact to soil and surface water, and construction worker inhalation during excavation. Potential exposure routes for a future redevelopment scenario may include inhalation from VI and drinking from wells, if installed. Potential routes of exposure for downgradient properties may include the VI pathway if new construction occurs and/or occupied buildings are modified and potential use of untreated groundwater.

III. RESPONSE CATEGORY

On September 11, 2010, DEP published the Notice of Listing on the PAPL. DEP has the discretion to place sites on the PAPL when it has determined through investigation that there are releases or threatened releases of hazardous substances, or releases or threatened releases of contaminants that present a substantial danger such that placement on the PAPL is warranted. In accordance with the requirements of Section 502(a) of HSCA, the Hazard Ranking System (HRS; 40 CFR Part 300, Appendix A), established under the Federal Superfund Act, is utilized to rank the sites for placement on the PAPL. Placement of a site on the PAPL is used to identify

and prioritize sites that require a remedial response to address threats to the public health, safety, or the environment. Remedial responses are expected to cost more than \$2M or to take more than one year to implement.

IV. CLEANUP STANDARDS

Section 106 of Act 2 states that environmental remediation standards established under that statute shall be applicable to remediation conducted under HSCA. This Site will be remediated to a combination of the Act 2 Standards, including background, Statewide health, and site-specific, based on the proposed end use of the Source Property, which in this instance is residential. The selection of a residential standard assures that the cleanup is protective for the proposed Source Property reuse. DEP maintains discretion under HSCA to select remedies that meet any one or a combination of cleanup standards under Act 2.

A background standard will be applied to certain inorganic contaminants or other organic compounds if the contaminant is determined to be present because it is a natural component of soil or because it has been released from an off-site facility and migrated onto the Site.

A residential Statewide health standard will be applied to COCs based upon post-remediation sample analysis. Under the Statewide health standard, the regulations in Chapter 250 establish a list of cleanup levels for certain contaminants. The MSCs are the concentrations of contaminants in soil or groundwater for residential and non-residential exposures. The standard may be met by using treatment and removal technologies.

A residential site-specific standard will be applied to COCs, including TCE, where DEP has determined that achieving a Statewide health standard may not be practical. Under the site-specific standard, cleanup levels can be developed specifically for a site based on the contaminants, exposures, and conditions unique to the Site. The following considerations apply:

- For carcinogens, the cleanup levels for soil and groundwater are established at levels that represent a cumulative excess cancer risk of between one in 10,000 to one in 1,000,000.
- For toxic chemicals other than carcinogens, soil and groundwater must be cleaned up to a level that prevents deleterious effects to the exposed population.
- Current and probable future uses of groundwater in aquifers must be identified and protected.
- Concentrations of contaminants in soil must protect against carcinogenic and other toxic effects based on direct contact with the soil. Soil cleanup standards must also be protective of groundwater uses.
- The cleanup standards may be attained through a combination of remediation activities that can include treatment, removal, engineering controls, or ICs and can include innovative or other demonstrated measures.

V. APPLICABLE, OR RELEVANT AND APPROPRIATE REQUIREMENTS (“ARARs”)

Section 504 of HSCA requires that final remedial responses must meet (or waive or modify) all ARARs and be cost effective. The table in Appendix B lists standards, requirements, criteria, or limitations that are legally applicable, or relevant and appropriate under the circumstances presented by the Site.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or state law, that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a state Site. The “applicability” determination is a legal one and implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or state law that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a state site, address problems or situations sufficiently similar to those encountered and their use is well suited to the particular site.

The determination of relevant and appropriate relies on professional judgment. A requirement can be judged by comparing a number of factors, including the characteristics of the remedial action, the hazardous substances in question, or the physical circumstances of the site, with those addressed in the requirement. It is also helpful to look at the objective and origin of the requirement.

A requirement that is determined to be relevant and appropriate must be complied with to the same degree as if it were applicable. However, there is more discretion by DEP in this determination. It is possible for only part of a requirement to be considered relevant and appropriate, the rest being dismissed, if judged not to be relevant and appropriate in a given case.

Non-promulgated or non-regulatory documents (health advisories, guidance, proposed regulations), issued by the state or Federal government, are not considered ARARs and are referred to as “to be considered” requirements or TBCs. TBCs are evaluated along with ARARs and are considered appropriate in the absence of a specific ARAR or where ARARs are not sufficiently protective in developing cleanup goals. A TBC identified for the action must be complied with to the same degree as if it were applicable.

VI. ANALYSIS OF ALTERNATIVES

In 2017, prior to completion of the FS, Roux prepared a Preliminary FS Screening Memorandum (“FS Screening Memo”) to address groundwater impacts at the Site, groundwater impacts to surface water and sediment at the Site, and the potential for VI off of the Source Property. The

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purpose of the FS Screening Memo was to identify remedial alternative technologies (“RAs”), which would be retained for further consideration in the FS. The RAs were evaluated for implementability, effectiveness, and relative cost. The seven retained RAs were evaluated further in the FS. The 2020 RAA addressed unsaturated soil on the Source Property. The 2020 Tech Memo evaluated four technologies capable of simultaneously addressing contaminated unsaturated and saturated soils on the Source Property. After reviewing the 2020 Tech Memo, Roux submitted a FS Addendum in December 2020. The FS Addendum evaluated an eighth RA to integrate a RA for soil and groundwater source area mitigation with the FS.

DEP is proposing to divide the Site into three operable units (“OUs”) to address the contamination at the Site.

- OU1 would address soil contamination on the Source Property.
- OU2 would address Site groundwater.
- OU3 would address drinking water impacts.

Based on requirements of HSCA, the RAs were analyzed to determine: 1) the extent to which each alternative protects public health and the environment; 2) the extent to which each alternative complies with or otherwise addresses ARARs; 3) the extent to which each alternative is feasible, effective, implementable, and permanent, and 4) the relative cost effectiveness of each alternative. A summary of costs for each alternative considered is presented in Appendix C. DEP considered the most viable alternatives described, below.

OU1: SOILS

OU 1 consists of the soil source areas, as shown in Figure 3, described in Section C above, and includes unsaturated soils. Saturated soils are defined as the solid media located below the groundwater table and above the bedrock. Remedial alternatives for addressing saturated soils are evaluated as part of either OU1 or OU2 Groundwater depending on the nature of the remediation involved. The Remedial Action Objectives (“RAOs”) are

- 1) assuring that exposure pathways are eliminated or remain closed in accordance with an Act 2 Standard, based on the proposed residential use of the Source Property;
- 2) reducing contaminant transfer and migration from the soil into groundwater; and
- 3) preventing movement of contaminated soils by water or wind.

DEP evaluated the following remedial alternatives as they apply to each area of impact:

- OU1: Alternative 1 - No Action
- OU1: Alternative 2 - Engineering Controls, Coupled with Institutional Controls (“ICs”)
- OU1: Alternative 3 - Excavation with Offsite Treatment and/or Disposal
- OU1: Alternative 4 - Excavation with Onsite Treatment
- OU1: Alternative 5 - In Situ Chemical Oxidation/In Situ Chemical Reduction (“ISCO/ISCR”), Coupled with Soil Mixing

More specific information concerning each alternative, including further breakdown of costs, is provided in the 2020 Tech Memo.

OU1: ALTERNATIVE 1 - No Action

Description of the Alternative

Under this alternative, DEP would require no further action be taken to mitigate the threat of Site-related contamination. This alternative serves as a baseline to compare against other response actions. This alternative would be feasible and implementable because no action is being taken but would not be effective in addressing the health threats to the public and does not offer a permanent solution.

Compliance with ARARs

This alternative would not comply with ARARs because it would not meet Act 2 Standards or antidegradation requirements listed in Chapter 93 that protect LVC from diffuse COC discharges originating from the soil source areas.

Cost Effectiveness

There is no cost associated with this alternative.

OU1: Common Elements of Alternatives 2 through 5

Certain common elements are incorporated into all OU1 alternatives except for No Action. The degree to which these common elements apply may differ among the alternatives and may depend on the concentrations of COCs that remain after implementation. The following common elements apply to OU1 Alternatives 2 through 5:

- Pre-Design Investigation(s)
 - will establish and verify areas to be targeted for attainment of one or more standards,
 - will include the collection of baseline data from LVC and adjacent wetlands,
 - determine the extent of fluoride detected in soil in the May 2021 Roux sampling activity which has not been fully defined in the cesspool area and acid handling areas depicted in Figure 2, and
 - determine if PFAS are COCs in soil.
- Evaluation and pilot testing needed to implement active remedial strategies will be performed as part of remedial design activities.
- Engineering controls are described in the FS as remedial actions designed to contain or control physical contact with or migration of COCs in storm water and/or groundwater. Engineering controls are also described as best management practices (“BMPs”).
- ICs are measures taken to limit or prohibit certain activities that may interfere with the integrity of a remedial action or result in exposure to regulated substances at a site and typically involve activity and use limitations (“AULs”). AULs are established to prevent exposure to COCs and protect the remedy. The ICs developed for soil would be integrated with engineering controls described in the OU2 Groundwater analysis of alternatives below, including surface barriers, stormwater management structures and targeted plantings to protect LVC from stormwater runoff and mitigate diffuse discharge of COCs. Environmental Covenants (“ECs”) on the Source Property would be drafted and recorded to implement the AULs in accordance with the Uniform Environmental

Covenants Act (“UECA”). Pursuant to Section 512 of HSCA, DEP could issue an Administrative Order (“HSCA 512 Order”) to a property owner who refuses to sign and record an EC. Such an EC or HSCA 512 Order would be attached to the deed of the property and be permanent, running with the land. A common IC applied to soil is a prohibition or limitation on future excavation or movement of contaminated soil to prevent human or ecological exposure.

- Post-remedial care and monitoring would include a periodic review of ICs and any engineering controls that are incorporated into the remedy. The outcome of this monitoring would be documented to verify that the RAOs continue to be met. If engineering controls (e.g., vapor mitigation systems) require maintenance, maintenance plans would be included.

OUI: ALTERNATIVE 2 - Engineering Controls, Coupled with ICs

Description of the Alternative

In addition to the common elements described above, implementation of this alternative would involve characterization and evaluation of current and potential exposure pathways and risk levels associated with COCs during the design phase to determine the exact areas and COC concentrations. Engineering controls for source area soils may include surface barrier(s), aimed at addressing direct contact to COCs and preventing the transfer of COCs from unsaturated soils to groundwater, as rainfall infiltrates and passes through contaminated soils (known as the soil-to-groundwater pathway).

Saturated soils are impacted by contaminated groundwater and can hold COCs, acting as a continuing source to groundwater contamination. Under this alternative, no steps would be taken to address these existing sources of contamination in saturated soils.

To address the VI pathway, engineering controls may consist of the installation of vapor barriers or VI mitigation systems for any buildings constructed and intended for occupancy on the Source Property.

ICs, in the form of an EC or a HSCA 512 Order, would be recorded on the deed of the Source Property and be permanent, running with the land. AULs would ensure that barriers and/or mitigation systems are installed when development occurs and properly operated and maintained in the future. Restrictions on the excavation and/or disturbance and/or relocation of soils would also be included.

Installation, operation and maintenance (“O&M”) of engineering controls associated with redevelopment of the property would be the responsibility of the property owner, operator, and/or the developer, while DEP would be responsible for ensuring ICs are implemented and for monitoring IC compliance.

Engineering controls and ICs specific to Source Property soils would be protective of human health, feasible, effective, and implementable but would not address saturated soils as an ongoing source of groundwater contamination.

Compliance with ARARs

Alternative 2 would meet the requirements of the residential site-specific Act 2 Standards via pathway elimination. COC source material would remain, therefore, antidegradation requirements listed in Chapter 93 that protect LVC from diffuse COC discharges would not be met solely through engineering controls and ICs.

Surface Barriers serving as engineering controls would be constructed in accordance with Appendix II-A: The Use of Caps as Activity and Use Limitation of the Land Recycling Program Technical Guidance Manual (“The TGM”) and would be required to comply with storm water management requirements including erosion and sedimentation controls.

ICs would be prepared as described above in accordance with UECA and/or HSCA Section 512.

Cost Effectiveness

A detailed cost breakdown for this alternative is presented in the 2020 RAA prepared for DEP by GES. Implementation costs, including design, planning, fence construction, EC filing fees, and documentation/reporting are estimated at \$156,345. This does not include costs related to the construction of a surface barrier. Annual maintenance and reporting costs are estimated to be \$12,000. Over a 30-year lifespan the total cost associated with Alternative 2 (including contingency - 30% and inflation - 3%) is \$796,257. If PFAS are identified as COCs in soils, the overall cost of this alternative would not be expected to increase unless additional areas of concern are identified.

OU1: Common Elements of Alternatives 3 through 5

- Process monitoring would be applicable to the active remedial alternatives that involve construction work to remove and/or treat COCs in soils and may include interim soil sampling to evaluate the status of the remediation, monitoring for potential stream impacts resulting from remediation activities, and air monitoring to ensure that workers and the community are not exposed to COCs.
- Post-remediation performance verification is intended to assure that the active remediation has been completed successfully. It could include post-excavation/post-treatment soil sampling, sampling of backfill (treated soil or imported fill), and physical testing of remediated areas for compaction and/or permeability.
- Restoration of certain areas subjected to soil remediation including grading may be necessary to prevent erosion and/or infiltration after work has been completed.

OU1: ALTERNATIVE 3 - Excavation with Offsite Treatment and/or Disposal

Description of the Alternative

In addition to the common elements described above, this alternative involves the use of earth moving equipment to excavate then remove contaminated soils from the Source Property. Soils may be stockpiled onsite or loaded directly into trucks prior to shipment to a treatment and/or disposal facility. Excavation within Plant 5 and Plant 8 would require building demolition. This alternative is applicable to both unsaturated and/or saturated soils. However, excavation of saturated soils would require dewatering, including handling, treatment, and disposal of

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contaminated water. This alternative may be used in combination with one or more other alternatives to address contaminated saturated soil on the Source Property.

Excavation followed by offsite disposal would permanently remove contaminated soil from the Source Property and address direct contact and the soil-to-groundwater pathway. If applied to saturated soil, the contaminants within the soil media would be removed. Completion of the excavation would involve sampling and analysis to document that excavation goals have been met. Backfill would be imported to restore excavated areas to their pre-construction grade.

This alternative may require less engineering controls and/or less restrictive ICs than Alternative 2, which provides for no active remediation of contaminated soil. (Source Property ICs would be required for OU2 Groundwater). After backfilling and restoration is completed, long-term O&M would not be necessary.

This alternative would be feasible, effective, and protective of human health. It would be difficult to implement due to the shallow groundwater table in certain areas of the Source Property. The shallow depth of the groundwater in some areas would cause saturation of soils during excavation and a greater need for dewatering and to contain increasing contaminated saturated soils on the Source Property. The potential presence of PFAS may result in difficulties associated with finding a disposal facility to accept the soil. Additionally, the low bridge clearance on South Malin Road may require smaller equipment and trucks to be used than for standard excavation projects. Increased truck traffic would result from offsite transport and backfill importation activities and could result in community concerns.

Compliance with ARARs

The goal of soil excavation with offsite disposal would be to demonstrate attainment of a combination of residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. This will be accomplished via post-excavation soil attainment sampling performed in accordance with applicable requirements of Act 2, the Act 2 regulations (25 Pa. Code Section 250), and the TGM.

Implementation of this alternative would require stormwater management plans listing BMPs and other erosion and sedimentation controls. Fugitive dust emissions generated during remedial activities will need to be controlled. Building demolition would be performed in accordance with asbestos abatement regulations and notification requirements.

Upon analytical waste classification and excavation, soils would be handled as residual or hazardous wastes in accordance with solid waste regulations. Prior to offsite transport of contaminated soils, additional laboratory analysis of soils would be required under state and Federal waste management regulations and to facilitate selection of one or more appropriate treatment and/or disposal facilities permitted to accept hazardous or residual waste. Fill that is used for backfilling excavated areas will need to meet the acceptance and operation standards for clean fill or regulated fill.

Where applied to the saturated zone, this alternative would necessitate pumping of groundwater that would need to be treated and discharged or disposed in accordance with pretreatment

requirements or waste management regulations. In accordance with § 92a.54, discharges not authorized include discharges to surface waters classified as EV waters under 25 Pa. Code Chapter 93 or discharges containing toxic or hazardous pollutants. Therefore, discharge to surface water is not considered feasible.

Cost Effectiveness

Costs associated with the excavation and offsite disposal alternative include building demolition, transportation, and offsite treatment/disposal. More detailed cost information is provided in the 2020 Tech Memo prepared by GES. When applied to saturated and unsaturated soil, Alternative 3 is estimated to cost \$7.3M. Implementation of this alternative would reduce costs associated with addressing groundwater (OU2) in the unconsolidated zone (i.e., above bedrock). Selection of backfill materials may enhance cost effectiveness of certain OU2 alternatives described, below. If PFAS are identified as COCs in soils, the costs associated with soil disposal may be expected to increase if the waste was not already classified as hazardous waste. Sampling costs would also increase.

This alternative would not require expenditure for long-term O&M because contaminated soils would be permanently removed.

OU1: ALTERNATIVE 4 - Excavation with Onsite Treatment

Description of the Alternative

In addition to the common elements described above, this alternative involves use of earth moving equipment to excavate contaminated soils, like Alternative 3. The contaminated soils would be stockpiled on the Source Property. Then one or more treatment technologies would be used to treat the excavated soils. Treatment technologies could include ex situ soil vapor extraction or thermal treatment to address VOCs and/or equipment to stabilize COCs with a binding additive such as Portland cement to address direct contact and the soil-to-groundwater pathway. Post treatment soil samples would be collected and analyzed to verify that residential Act 2 Standards have been achieved before treated soils are used as backfill. Excavation within Plant 5 and Plant 8 would require building demolition. This alternative is applicable to both unsaturated and saturated soils. However, excavation of saturated soils would require dewatering, including handling, treatment, and disposal of contaminated water.

Excavation followed by onsite treatment would effectively address COCs in soil by removal from soil (if thermal treatment is used to address VOCs) and/or by preventing transfer of COCs to groundwater (where binding agents are used) through stabilization. Treatment equipment deployed on the Source Property would be designed to capture or mitigate fugitive emissions. Completion of the excavation would involve sampling and analysis to document that residential Act 2 Standards have been met. Treated soil would be used to restore excavated areas to their pre-construction grade.

Limited offsite disposal, engineering controls and/or ICs may be needed in combination with this alternative to eliminate direct contact with soils containing COCs exceeding the RDC Act 2 Standards if COC concentrations cannot be adequately addressed by the selected treatment

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technology. After excavation restoration is completed, long-term O&M would not be necessary. ICs may require monitoring of groundwater and surface water.

This alternative would be feasible, effective, and protective of human health. It would be difficult to implement due to the shallow groundwater table in certain areas of the Source Property. Access limitations resulting from the low-clearance bridge on South Malin Road may complicate remedy implementation due to the size of standard soil excavation and treatment equipment.

Compliance with ARARs

The goal of soil excavation with onsite treatment is to demonstrate attainment of a combination of residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. This will be accomplished via post-excitation soil attainment sampling performed in accordance with applicable requirements of Act 2, the Act 2 regulations (25 Pa. Code Section 250), and the TGM.

Implementation of this alternative would require stormwater management plans listing BMPs and other erosion and sedimentation controls. Fugitive dust emissions generated during remedial activities will need to be controlled. Building demolition would be performed in accordance with asbestos abatement regulations and notification requirements.

Where applied to the saturated zone, groundwater resulting from dewatering would need to be treated and discharged or disposed in accordance with any public sewer pretreatment requirements or waste management regulations. In accordance with § 92a.54, discharges not authorized include discharges to surface waters classified as EV waters under 25 Pa. Code Chapter 93 or discharges containing toxic or hazardous pollutants. Therefore, discharge to surface water is not considered feasible.

To comply with post construction stormwater management requirements, restoration of remediated areas would be incorporated into the BMPs described as a common element in the OU2 Groundwater alternatives (except for No Action).

Cost Effectiveness

Costs associated with the excavation with the onsite treatment alternative are detailed in the GES 2020 Tech Memo and include building demolition and onsite treatment. When applied to saturated and unsaturated soil, Alternative 4 is estimated to cost \$6.0M. Implementation of this alternative would reduce costs associated with addressing groundwater (OU2 – Groundwater) in the unconsolidated zone (i.e., above bedrock). Coordination of OU1 and OU2 design and implementation may enhance cost effectiveness of the overall remedy. If PFAS are identified as COCs in soils, costs associated with treatment of contaminated soil would be expected to increase, if additional treatment is necessary. Sampling costs would also increase.

OU1: ALTERNATIVE 5 – ISCO/ISCR, Coupled with Soil Mixing

Description of the Alternative

In situ chemical oxidation (“ISCO”) and/or in situ chemical reduction (“ISCR”), coupled with soil mixing/homogenization, are capable of destroying organic compounds including CVOCs found at the Site. ISCO is often used at sites to quickly transform organic contaminants into non-toxic breakdown products (i.e., carbon dioxide and chloride). However, ISCO can transform other COCs in soil or groundwater, such as trivalent chromium and some PFAS compounds, into more harmful and more mobile breakdown products. Therefore, it is more likely that ISCR will be employed at this Site. Some varieties of ISCR amendments, such as zero-valent iron (“ZVI”) that address CVOCs, are also capable of transforming and precipitating inorganic (e.g., heavy metals) contaminants, reducing mobility and impacts to groundwater via the soil-to-groundwater pathway. In some circumstances, soil amendments including additives such as clay or activated carbon may be incorporated to reduce the movement of groundwater and/or contaminants through treated soil. This characteristic could have the secondary benefit of acting as a permeable reactive barrier or as a hydraulic barrier, which could protect LVC from contaminant migration and/or migration of amendments that are injected into soil, to address groundwater contamination.

Amendment selection and dosing would be determined through remedial design activities such as treatability, bench, tracer, and/or pilot testing to maximize effectiveness and minimize negative effects such as impacts to LVC or on-going natural attenuation of groundwater contamination. Selection of amendments could be tailored to address COCs present in different areas of soil contamination as depicted in Figure 3. Since mechanical augers would be utilized in a grid pattern for mixing, soil excavation would not be required. Contaminated areas are treated as smaller units (cells) to optimize reagent dosing, ensure thorough mixing, and facilitate attainment evaluation. In addition to the common elements described above, building demolition would be necessary to facilitate access for the soil mixing. Alternative 5 can also be applied to saturated zone soils to address dissolved and adsorbed COCs which act as a source of groundwater contamination. Implementation of this technology would potentially hinder future development in areas where soil mixing is applied by compromising the soil structure and strength. The property owner/redeveloper may need to take additional steps to stabilize the treated soils to facilitate property development and reuse of the Source Property.

ICs including limits on excavation or a requirement for a soil management plan may be necessary to address potential direct contact exposure to inorganic COCs in treated soils for protection of human health and to ensure permanence. The need for ICs would be evaluated based on post-remediation sampling and analysis.

This alternative would be feasible, implementable, effective, and protective of human health.

Compliance with ARARs

The goal of ISCO/ISCR treatment would be to demonstrate attainment of residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. This will be accomplished via post-remediation soil attainment sampling performed in accordance with applicable requirements of Act 2, the Act 2 regulations (25 Pa.

Code Section 250), and the TGM. It would ultimately aid in meeting anti-degradation requirements by addressing COCs at their sources.

Though less intrusive than excavation remedies, implementation of this alternative would still require stormwater management plans listing BMPs and other erosion and sedimentation controls. The Federal Safe Drinking Water Underground Injection Control (“UIC”) Program regulates subsurface dosing of fluids (40 CFR Parts 144 and 146). EPA authorization will be required before amendment injection begins. Fugitive dust emissions generated during remedial activities will need to be controlled. Building demolition would be performed in accordance with asbestos abatement regulations and notification requirements.

In order to comply with antidegradation requirements applicable to LVC, other potential impacts to surface water resulting from amendment injection would need to be assessed during a design evaluation. Design considerations may include use of the mixing zone closest to LVC as a hydraulic or reactive barrier to aid in meeting antidegradation requirements and protecting surface water.

Cost Effectiveness

Costs associated with the ISCO/ISCR, coupled with soil mixing alternative include building demolition, treatment reagent, and specialized equipment used for soil mixing. A more detailed cost breakdown is presented in the 2020 Tech Memo. When applied to saturated and unsaturated soil, Alternative 5 is estimated to cost \$2.8M. As with other active approaches, implementation of this alternative would reduce costs associated with addressing groundwater (OU2) in the unconsolidated zone (i.e., above bedrock). If PFAS are identified as COCs in soils, an increase in costs may be expected, depending on the extent of contamination and the need for additional amounts or types of amendments. Sampling costs would increase.

OU2: GROUNDWATER

OU2 consists of contaminated groundwater originating from the Source Property and extending to the east northeast as described in Section C, above, and shown on Figure 4. RAOs for groundwater include:

- 1) assuring that potential future exposure pathways resulting from groundwater contamination remain closed in accordance with Act 2, based on the proposed residential use of the Source Property and current and futures use of downgradient properties located within the Site boundary;
- 2) reducing contaminant migration across the Source Property boundary;
- 3) reducing COC discharge to LVC; and
- 4) hastening retraction of the groundwater contaminant plume.

DEP evaluated the following remedial alternatives:

- OU2: Alternative 1 – No Action
- OU2: Alternative 2 – Monitored Natural Attenuation (“MNA”)
- OU2: Alternative 3 – In Situ Injection (ISCO/ISCR/Bioremediation)
- OU2: Alternative 4 – In Situ Thermal Treatment (“ISTT”)
- OU2: Alternative 5 – Hydraulic Control (“HC”)

OU2: ALTERNATIVE 1 – No Action

Description of the Alternative

Under this alternative, DEP would require no further action be taken to mitigate the threat of Site-related contamination. This alternative serves as a baseline to compare against other response actions. This alternative would be feasible and implementable because no action is being taken but would not be effective in addressing the threats to the public health or the environment and does not offer a permanent solution.

Compliance with ARARs

This alternative would not comply with ARARs because it would not meet Act 2 Standards or antidegradation requirements listed in Chapter 93 that protect LVC from diffuse COC discharges originating from the source areas.

Cost Effectiveness

There is no cost associated with this alternative.

OU2: Common Elements of Alternatives 2 through 5

Certain common elements are incorporated into all OU2 alternatives except for No Action. The degree to which these common elements apply may differ among the alternatives and may depend on the concentrations of COCs that remain after implementation. The following common elements apply to OU2 Alternatives 2 through 5:

- Pre-Design Investigations may include
 - a groundwater investigation in the northeast corner of the Source Property⁵;
 - offsite inorganics and PFAS analyses; and/or
 - sampling and analysis to determine background conditions.
- Evaluation and pilot testing needed to implement active remedial strategies would be performed as part of remedial design activities.
- Engineering controls would include stormwater control BMPs, capping in selected areas, and plantings to reduce COC migration and discharge to LVC; any necessary VI mitigation measures needed to prevent human exposure in modified or new occupied structures within the Site boundary; and may also include treatment equipment to treat the private water supply located within the affected area and specifically addressed as OU3 (Drinking Water).
- ICs will be necessary on the Source Property and select downgradient properties. ICs may include local or county rules and requirements, HSCA 512 Orders or ECs to document and ensure compliance with AULs. To prevent installation of new wells for potable use, any potential new potable well within the area of the Site would need to comply with Chester County Health Department (“CCHD”) regulations that require a permit for any new supply wells prior to installation. CCHD considers known areas of

⁵ Costs for performing the groundwater investigation in the northeast corner of the Source Property were not included in the 2021 FS prepared by Roux. Based on prior experience, DEP included an estimate cost of \$50,000 to complete the groundwater investigation in the northeast corner of the Source Property.

groundwater contamination when issuing these permits. In addition, the CCHD regulations require sampling of any new well installed in the vicinity of the Site to demonstrate that it meets the drinking water standards before permission from the CCHD is granted to use the new well for drinking purposes. The VI pathway would require ECs or HSCA 512 Orders, mandating evaluation of the VI pathway prior to new construction and to assure maintenance and proper operation of necessary VI mitigation measures. ECs or HSCA 512 Orders would also be used to protect engineering controls intended to address diffuse COC discharges to LVC. Such an EC or HSCA 512 Order would be attached to the deed of the property and be permanent, running with the land.

- A post-remedial care plan will be prepared and implemented to assure ICs and engineering controls are maintained and long-term groundwater sampling is focused on monitoring continued natural attenuation; reduced migration of COCs across the Source Property boundary; retraction of the contaminant plume; and the remedy's effect upon diffuse discharge of contaminated groundwater to LVC. Routine groundwater monitoring could justify removal of ICs from affected properties as the size of the contaminant plume is reduced over time. Effective monitoring would require evaluation and potentially enhancement of the existing monitoring well network.

OU2: ALTERNATIVE 2 – MNA

Description of the Alternative

Monitored Natural Attenuation (“MNA”) involves allowing multiple natural processes including dispersion, dilution, diffusion, abiotic, and biotic degradation to eventually meet groundwater RAOs. In addition to the common elements listed above, Alternative 2 would incorporate engineering controls and ICs to assure exposure pathways are addressed and eliminated. Implementing this alternative would not require demolition of Source Property buildings, but if buildings and building slabs are removed as part of the OU1 remedy, additional engineering controls (i.e., impermeable surface barriers) may be needed to prevent surface water infiltration and increased contaminant migration and/or discharge to LVC. Alternative 2 would include routine groundwater monitoring to assess and document the ongoing attenuation of the groundwater contamination at the Site. Data summarized in the 2021 RI suggests that, over time, natural attenuation processes have been resulting in reduced groundwater contamination and retraction of the contaminant plume associated with the Site, although the rate of reduction has not been demonstrated. Natural attenuation processes would be less effective for certain inorganic COCs, 1,4-Dioxane and PFAS.

Selection of an active remedy to address OU1 may shorten the timeframe required to reduce the size of the contaminant plume, reduce offsite contaminant migration, and discharge to LVC. Selection of an appropriate OU1 remedy could also help create conditions favorable for biological degradation of CVOCs, a key component of natural attenuation. However, because of the high CVOC concentrations within the bedrock aquifer and the likelihood that CVOCs have been diffused into the bedrock matrix, regardless of which alternative is selected to address OU1, MNA is expected to take many decades to allow for removal of ICs on all properties downgradient from the Source Property.

MNA, along with engineering controls and ICs, would be protective of human health, feasible, and effective, but it would take many decades to implement and not address CVOCs trapped in the bedrock as an ongoing source of groundwater contamination.

Compliance with ARARs

Alternative 2 would eventually attain residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. Exposure pathways would be eliminated as required by the site-specific standard. Maintenance and attainment of Act 2 Standards would require implementation of a long-term monitoring plan consistent with the TGM. Long term sampling would also be necessary to demonstrate progress toward achieving antidegradation requirements for surface water. However, attainment of water quality and anti-degradation ARARs would likely take decades or more due to the high COC concentrations in groundwater and likely diffused in bedrock.

Engineering controls would be required to comply with ARARs related to storm water management requirements including erosion and sedimentation controls. ICs would be prepared as required by UECA and/or HSCA Section 512.

Cost Effectiveness

Pre-implementation costs associated with the MNA alternative would include pre-design investigation, design of LVC engineering controls, planning, and IC costs estimated at \$215,000. Construction costs for this alternative are limited to the engineering controls for addressing the LVC discharge estimated at \$358,530. O&M costs would accrue over a 30-year period and are estimated to be \$2.4M on a present value (“PV”) basis. The total estimated cost of the MNA alternative is \$3.0M. The presence of PFAS in groundwater and surface water is likely to increase sampling costs associated with this alternative.

A detailed breakdown of Alternative 2 costs is provided in the 2021 FS, prepared by Roux.

OU2: Common Element of Alternatives 3 through 5

- Process and performance monitoring would take place during active remedy implementation and could be used to optimize remedy implementation and/or to justify transition to MNA. Performance monitoring would also be used to assure that remedy implementation is not causing contaminant migration or emissions across the Source Property boundary or negatively affecting LVC.

OU2: ALTERNATIVE 3 – In Situ Injection (ISCO/ISCR/Bioremediation)

Description of the Alternative

In situ injection remedies involve introducing amendments directly into the contaminated aquifer to treat contaminated groundwater. Potential amendments that might be injected include various chemical oxidants (known as in situ chemical oxidation – ISCO), reducing substances such as zero valent iron, or ZVI, capable of chemically reducing or destroying dissolved contaminants (known as in situ chemical reduction – ISCR), or nutrients like emulsified vegetable oil, sodium lactate, or molasses, and/or cultured bacteria to facilitate or enhance biological degradation of

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CVOCs (known as bioremediation). Certain types of ISCR amendments are capable of directly destroying CVOCs and providing a long-term nutrient source for continued biological degradation of CVOCs. Other commercially available amendment mixtures are capable of reducing generation of methane and addressing PFAS through carbon adsorption. The FS Addendum assumed that ISCR would be used as an amendment. Use of ISCR is more likely at the Site due to the detection of PFAS which can be transformed into more toxic breakdown products by ISCO addition. Under this alternative, amendment selection will be based on design activities and may be modified during phased implementation.

In addition to the common elements listed above, Alternative 3 would be focused on limited hot spot areas of the Source Property, which continue to act as ongoing sources of groundwater contamination migrating beneath downgradient properties and resulting in the diffuse discharge of contaminated groundwater to LVC. These areas include the former vapor degreaser in Plant 8 and the DSA, where groundwater within the shallow bedrock interval (i.e., less than 120 ft. deep) contains the highest CVOC concentrations. This methodology, particularly ISCR, could also be used to reduce the toxicity of hexavalent chromium, which has been identified in Source Property groundwater and surface water. In situ injection may not be viable for hot spot areas (i.e., acid rinse spill area) in close proximity to LVC because of potential negative impacts to surface water.

Injection methods that would be used might include direct injection into deep soils within the target source zone, allowing for the amendment to migrate downward into the bedrock aquifer along similar paths that the contaminant traveled when released. This approach, which is fully described in the FS Addendum, may require supplemental bedrock injection to achieve effective amendment distribution. Demolition of Source Property buildings may not be required to implement this alternative for groundwater, but demolition could be part of an overall remedy, depending on how contaminated soils are addressed. This alternative would need to be coordinated with the OU1 soil remedy to avoid potential negative or contradictory effects (i.e., backfill materials used in an excavation and offsite disposal alternative could prevent adequate amendment distribution or ISCO used with soil mixing could counteract ISCR or biological amendments introduced to address groundwater). Some amendments are longer acting, which could address CVOCs currently diffused in the rock matrix and possibly migrate beyond the immediate target treatment area reducing downgradient concentrations.

It is anticipated that implementation of the active (injection) portion of this alternative would involve pre-design characterization, treatability testing, and closely monitored, phased implementation to maximize effectiveness and avoid negative outcomes, such as negative impacts to LVC or to the ongoing natural attenuation processes, demonstrated during the RI. The effectiveness and performance of Alternative 3 would be assessed by monitoring amendment distribution throughout the target treatment zone and attainment of conditions that are conducive for meeting the overall objectives (i.e., hastened reduction of offsite migration/stream discharge and retraction of the contaminant plume). After these performance benchmarks have been met, MNA, combined with engineering controls and ICs, will be implemented through a long-term monitoring plan, coupled with a post-remediation care plan.

This alternative would be feasible, implementable, effective, and protective of human health.

Compliance with ARARs

Alternative 3 would attain residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. Exposure pathways would be eliminated as required by the site-specific standard. Maintenance and attainment of Act 2 Standards would require implementation of a long-term monitoring plan/post remediation care plan consistent with the TGM. Antidegradation requirements for surface water would be achieved more quickly than through MNA alone. Post remediation sampling would also be necessary to demonstrate progress toward achieving antidegradation requirements for surface water.

The action and location specific ARARs described in OU1 Alternative 5 (ISCO/ISCR, Coupled with Soil Mixing) also apply to this alternative including storm water management requirements including erosion and sedimentation controls for any earth disturbance and UICs required under the EPA's Safe Drinking Water regulations must be met during implementation. EPA authorization will be required before amendment injection begins. Any fugitive dust emissions or vapors generated during remedial activities will need to be controlled.

Protections of LVC would be specified during the design phase to prevent unauthorized discharges to LVC in accordance with antidegradation requirements.

Cost Effectiveness

Costs associated with the in situ injection alternative are detailed in the 2021 FS and FS Addendum and are based on ISCR treatment of the building 8 vapor degreaser and drum storage source areas. The estimate assumes that amendments injected into the deep soil interval will only partially move into the target treatment zone within shallow bedrock.

Preconstruction/design costs for this alternative involve design, planning, and EC filing fees estimated at \$415,000. To account for potential bedrock amendment injection, quantities and costs provided in the FS Addendum have been included. These contingent costs for bedrock injection are estimated to be \$309,700. Capital costs associated with the active in situ injection implementation, including overburden and bedrock injections, and the engineering controls to reduce diffuse discharge to LVC are estimated at \$2.3M. Long-term costs, associated with monitoring in situ treatment during a 7-year active period, followed by MNA and management of engineering/ICs (calculated on a PV basis) over a 23-year post-remedial care period, are estimated to be \$2.5M. Over a 30-year lifespan, the total estimated cost associated with the in situ injection alternative is \$5.2M. The presence of PFAS in groundwater and surface water is likely to increase sampling costs associated with this alternative.

OU2: ALTERNATIVE 4 – ISTT

Description of the Alternative

In situ thermal treatment (“ISTT”) is an alternative capable of addressing VOCs in both soil (saturated and unsaturated) and groundwater by heating the contaminated source area media to preferentially volatilize the VOCs. Temperatures required to achieve this are near the boiling point of water and would generate steam capable of removing VOCs from the impacted media in the source area. Steam and vapors would be captured for treatment through a separate vapor

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extraction and treatment system. In addition to soil and water, ISTT is capable of removing VOCs diffused in the bedrock matrix. Practicality and cost considerations limit the depth at which ISTT can be implemented. For cost estimating purposes, the Source Property VOC areas shown in Figure 3 would be treated to a depth of 80 feet. Because of its applicability to groundwater and shallow bedrock, ISTT is evaluated as an OU2 groundwater alternative, though it would also address the VOC source areas in soils. ISTT is not applicable to the inorganic COCs, 1,4-dioxane, or PFAS at the Site, which would need to be addressed through expanded engineering controls and/or another OU1 remedial approach. Other potential implementability problems could be associated with collecting vapors in areas where shallow groundwater is present, but these potential problems could be resolved in the design phase. Water condensed from extracted vapor or generated due to system flooding would require treatment and/or offsite disposal or reinjection. If reinjection is necessary, careful design consideration will be needed to avoid interfering with the remedy and/or affecting LVC flow conditions.

To successfully implement ISTT, heater and extraction well spacing and placement would be based on pre-design investigation and pilot testing. Like other remedies intended to address soils, implementation of ISTT would require demolition of the former manufacturing buildings to accommodate access for drilling and remediation equipment. Performance monitoring and demonstration would be centered on achieving the required groundwater temperature throughout the targeted treatment zone. Additionally, temperature monitoring would be required to assure that LVC is not impacted by the thermal effects of ISTT. Vapors captured for treatment would be monitored to track removal efficiency. Implementation of active ISTT would occur over a short timeframe (i.e., 1 – 2 years). Despite the shorter timeframe, a large amount of energy would be needed to heat the subsurface media, resulting in a large carbon footprint for this alternative. After extracted CVOC concentrations reach asymptotic conditions or other treatment goals are met, MNA combined with engineering controls and ICs would be implemented through a long-term monitoring plan, coupled with a post-remediation care plan. Additionally, completion of this alternative would include certain components associated with OU1 Soil alternatives, such as surface grading and restoration to prevent soil erosion.

Compliance with ARARs

Alternative 4 would attain residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. Exposure pathways would be eliminated as required by the site-specific standard. Maintenance and attainment of Act 2 Standards would require implementation of a long-term monitoring plan/post remediation care plan consistent with the TGM. Long-term sampling would also be necessary to demonstrate progress toward achieving antidegradation requirements for surface water.

Any land disturbance required to implement ISTT will need to comply with stormwater management requirements including erosion and sedimentation controls.

As indicated, above, careful implementation and monitoring would be necessary to avoid thermal impacts to LVC. Fugitive dust emissions generated during remedial activities will need to be controlled. Extracted vapors would be treated to comply with air quality regulations.

Water collected by the vapor extraction system would be handled in accordance with waste management regulations, reinjected in accordance with the EPA's Safe Drinking Water regulations associated with UICs, and/or pre-treatment requirements of the Valley Forge Sewer Authority, which serves East Whiteland Township.

Cost Effectiveness

A breakdown of costs for the ISTT alternative is presented in the 2020 Tech Memo, prepared for DEP by GES. Capital costs associated with the ISTT alternative include demolition of facility structures, installation of equipment needed to heat the subsurface media, treat recovered vapors, and utility costs. Preconstruction/design costs for this alternative involve design, planning, and EC filing fees estimated at \$324,200. Capital costs associated with the active ISTT implementation include engineering controls to protect LVC and are estimated at \$14.3M. Long-term costs associated with MNA and management of engineering/institutional controls are calculated on a PV basis over a 27-year post-remedial care period and are estimated to be \$2.3M. Over a 30-year lifespan, the total estimated cost associated with the ISTT alternative is \$16.9M. The presence of PFAS in groundwater and surface water is likely to increase sampling costs associated with this alternative.

OU2: ALTERNATIVE 5 – HC

Description of the Alternative

Hydraulic Control ("HC") involves the targeted pumping of groundwater to address migration of COCs to downgradient areas and to LVC. Under this alternative extracted groundwater would require treatment to remove contaminants prior to reinjection on the Source Property. Reinjection would be necessary because of restrictions on discharges to LVC and limited capacity of the Valley Forge Sewer Authority to accept treated water based upon a 2008 email between DEP and the East Whiteland Township Public Works Director. Standard treatment technologies, including air stripping and carbon filtration, to address CVOCs, and chemical addition to facilitate removal of inorganic COCs would be employed to meet reinjection requirements. While treatment options are readily available for most COCs at the Site, the presence of 1,4-dioxane and PFAS could further complicate the design of a treatment system. This treatment process would also generate air emissions requiring further treatment and wastes including sludges from metals treatment and spent carbon filter media requiring offsite treatment and/or disposal. Reinjection would also be challenging because of the need to avoid effects to LVC, complex geology, and limited areas available for reinjection.

Alternative 5 would be capable of meeting the RAOs associated with reducing COC migration off the Source Property, reducing impacts to LVC via diffuse discharge of contaminated groundwater, and hastening retraction of the plume. However, the implementation of HC may also have certain negative effects, including altering the flow characteristics of LVC, and associated wetlands and changing the geochemistry and flow characteristics of groundwater in the source area, which could negatively impact ongoing natural attenuation processes. HC is not an effective technology for directly addressing contaminant source areas because groundwater is extracted from more permeable areas of the subsurface (i.e., fractures or sand layers), while much of the contaminant source remains in less permeable materials (i.e., rock or clay). This means that even after contaminant concentrations in extracted groundwater are reduced significantly, high COC concentrations may return quickly after groundwater extraction is

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terminated. The inability of HC to address the source of contamination means that it typically needs to be operated for decades, increasing this alternative's cost and energy usage (i.e., carbon footprint).

Design activities associated with HC would include hydraulic modelling and pilot testing to properly locate groundwater extraction and reinjection wells. Bench and field-scale testing of treatment technologies would also be employed prior to full-scale implementation to assure attainment of pre-injection requirements. The effectiveness of HC could be tracked through a combination of hydraulic monitoring and sampling to verify capture of contaminants migrating across the Source Property boundary and toward LVC. Groundwater contaminants which have already migrated away from the Source Property would be addressed through MNA, coupled with ICs, to prevent exposure resulting from installation of new wells and/or VI. These components of the response would be incorporated into a long-term monitoring plan.

Compliance with ARARs

Alternative 5 would attain residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. Exposure pathways would be eliminated as required by the site-specific standard. Maintenance and attainment of Act 2 Standards would require implementation of a long-term monitoring plan/post remediation care plan consistent with the TGM. Long-term sampling would also be necessary to demonstrate progress toward achieving antidegradation requirements for surface water. Because discharge of treated water to LVC is not planned, this alternative would comply with § 92a.54. Design consideration and careful implementation and monitoring would be necessary to avoid altering the natural flow conditions of LVC and associated wetlands.

UICs required under EPA's Safe Drinking Water regulations must be met during implementation if treated groundwater was to be reinjected.

Air emitted by the groundwater treatment system would require treatment to meet air quality standards. Additionally, solid wastes, including sludges and spent carbon, would be handled in accordance with waste management regulations. Construction of a groundwater treatment system would need to comply with storm water management requirements including erosion and sedimentation controls. Fugitive dust emissions generated during construction of the treatment plant will need to be controlled.

Cost Effectiveness

A breakdown of costs associated with the HC alternative is presented in the 2021 FS. Preconstruction/design costs for this alternative include pre-design investigation and design of the extraction/treatment/reinjection system and are estimated at \$615,000. Capital costs associated with the HC alternative include installation of extraction and injection wells, installation of pumps and piping to convey extracted contaminated and treated groundwater, and construction of a groundwater treatment plant. Capital costs associated with HC implementation are estimated at \$8.7M. Long-term costs associated with HC over the 30-year active O&M period are estimated to be \$29.1M. The total estimated cost of HC is \$38.5M. The presence of PFAS in groundwater is likely to increase treatment costs and the sampling costs associated with the alternative.

OU3: DRINKING WATER

OU3 consists of the one contaminated potable drinking water supply, located within the Site area. The RAO for drinking water is to mitigate the threat posed by use of the affected drinking water supply by ensuring the drinking water exposure pathway is closed. As noted above in Section B, this well was equipped with a POET in 1999. Periodic sampling of well water prior to treatment has revealed declining concentrations of TCE, from 53 µg/l prior to installation to 5.88 µg/l in 2017. After 2017, the affected home was sold and is currently unoccupied. The new property owner plans to use the home as a residence after renovations are completed. DEP considered the following three potential alternatives:

- OU3: Alternative 1 - No Action.
- OU3: Alternative 2 - Continued Operation, Maintenance, and Monitoring of Whole House Carbon Filtration Systems, Combined with Restrictions on the Use of Groundwater.
- OU3: Alternative 3 - Connection to the Existing Public Water Supply Waterline, Combined with Restrictions on the Use of Groundwater.

OU3: ALTERNATIVE 1 - No Action

Description of the Alternative

Under this alternative, no further action would be taken to mitigate the threat posed by ingestion and inhalation of Site-related contamination. This alternative serves as a baseline to compare against other response actions. This alternative would be feasible and implementable because no action is being taken but would not be effective in addressing the health threats to the public and does not offer a permanent solution.

Compliance with ARARs

This alternative would not comply with ARARs because it fails to prevent the public's exposure to hazardous substances.

Cost Effectiveness

There is no cost associated with this alternative.

OU3: ALTERNATIVE 2 – Continued Operation, Maintenance, and Monitoring of a Whole-House Filtration System, Combined with Restrictions on the Use of Groundwater

Description of the Alternative

A POET in the form of dual-canister granulated activated carbon filter units is installed in the residence with levels of TCE that exceed the MCL in the well. A properly maintained carbon POET is effective in eliminating the ingestion, inhalation, and dermal pathways of TCE and its breakdown products within the affected home. Sampling is necessary to determine the presence of PFAS. While carbon filtration is known to be an effective treatment methodology for PFAS, if PFAS are detected, modification of the POET may be necessary to meet ARARs.

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This alternative would provide a permanent solution to the potential for exposure to Site-related contamination, as long as the carbon filtration system is properly maintained. Operations, maintenance, and monitoring (“OM&M”) would include routine sampling to ensure that the contamination does not break through the system. There are sample ports installed before, in-between, and after each filter. Carbon filters would be replaced as necessary, when sampling reveals concentrations of TCE or its breakdown products in samples collected in between or after the filter units. Typically, after sampling reveals breakthrough in-between filters, the first filter would be replaced and what was the second filter would become the first filter.

The OM&M of the system would continue until concentrations of TCE and its breakdown products are confirmed by DEP to be below applicable MCLs or Statewide health MSCs in the untreated drinking water. Eight consecutive quarters of sampling will be necessary to confirm results are below the standards.

This alternative would also be feasible and implementable but could be an inconvenience to the residents of this property due to sampling, periodic change outs of the carbon tanks, and scheduling.

An IC, in the form of an EC or HSCA 512 Order, would be utilized to document the need for continued OM&M of the POET and acknowledgment of contaminated groundwater on the property. The residents would be required to execute an EC in accordance with UECA or a HSCA 512 Order could be issued if the property owner refuses to sign a covenant. Such an EC or HSCA 512 Order would be attached to the deed of the property and be permanent, running with the land. The potential installation of new wells for potable use would be addressed as described above in OU2 Groundwater Alternatives.

Compliance with ARARs

This alternative would comply with ARARs. DEP would ensure that the treatment system components comply with standards established by the NSF International and the American National Standards Institute. Although private drinking wells are not regulated by the PA Safe Drinking Water Act, 35 P.S. §§ 721.1-721.17 ("Safe Drinking Water Act"), the MCLs established by the Safe Drinking Water Act are relevant and appropriate as well as the Statewide health MSCs established by 25 Pa. Code Chapter 250. Post treatment samples would meet applicable MCLs and/or MSCs.

Cost Effectiveness

Costs associated with OM&M of the existing POET are presented in the 2021 FS in the evaluation of alternatives for addressing groundwater contamination at the Site. Based on an evaluation of pre-treatment sample data, a ten-year OM&M period is conservatively assumed for the purposes of the cost evaluation.

The 2021 FS includes costs for preparing a POET OM&M Plan, estimated at \$3,000. The costs assume that annual POET sampling (pre-, mid-, and post-treatment) would cost \$2,500 and will be performed over 8-years, followed by eight quarterly sampling events to demonstrate attainment. Roux also estimates that the filter may need to be changed out three times during the 10-year period. The estimated cost to service the POET provided in the 2021 FS is \$3,000.

Annual OM&M costs estimated in the 2021 FS are \$4,900 and the total PV cost is estimated to be \$37,420. It should be noted that all costs assume that the POET will not require modification based on PFAS analysis.

OU3: ALTERNATIVE 3 - Connection to the Existing Public Water Supply Waterline, Combined with Restrictions on the Use of Groundwater

Description of the Alternative

This alternative would consist of a lateral connection from the waterline main to the affected residential property, the connection of the lateral to the in-house plumbing, the repairs to all road surfaces or properties disturbed by the waterline lateral construction, and the required abandonment of the private water supply well.

This alternative would be protective of human health and safety by eliminating the threat of exposure to site contaminants through ingestion, dermal, and inhalation pathways. The future supply of water to the affected property will be provided by a water utility, which already has mandated monitoring requirements, to ensure the water meets human health standards for drinking water MCLs, including standards which may be adopted in the future, such as the proposed MCLs for select PFAS.

This alternative would be a feasible, effective, and a permanent solution. Implementation of this alternative would be completed in a short period of time. Water mains exist nearby.

Compliance with ARARs

This alternative would comply with ARARs. The utility responsible for providing the water would be required to comply with the PA Safe Drinking Water Act and the requirements of 25 PA Code Chapter 109-Safe Drinking Water Regulations. The community water system would be required to be designed and constructed in accordance with the substantive requirements of the DEP's Public Water Supply Manual, Part II relating to Community System Design Standards.

Construction of the waterline would be required to comply with ARARs related to storm water management BMPs requirements including erosion and sedimentation controls. Fugitive dust emissions generated during construction of the waterline will need to be controlled.

The required well abandonment would comply with CCHD's Rules and Regulations and PA Department of Conservation and Natural Resources ("DCNR")'s Water-Well Abandonment Guidelines established pursuant to the Water Well Drillers License Act.

Cost Effectiveness

Costs for connecting the existing affected residence were not evaluated in the 2021 FS. DEP contacted the local water utility and applied experience from other, similar projects to estimate costs for Alternative 3. All costs associated with this alternative would be preconstruction/design or construction costs, which include well abandonment.

Preconstruction costs are estimated to be \$5,000 and construction costs, including \$2,500 for well abandonment, are an estimated \$19,000, resulting in a total estimated cost of \$24,000 for this alternative. If PFAS is found in drinking water, it would not be expected to increase the cost of this alternative.

VII. SELECTED RESPONSE

OU1: SOILS

DEP has selected Alternative 5 - In Situ Chemical Oxidation and/or In Situ Chemical Reduction (ISCO/ISCR), Coupled with Soil Mixing to address areas of elevated COCs in unsaturated and saturated soils, as depicted on Figure 3. The soil mixing alternative was selected because it would destroy and/or sequester COCs in the treatment areas. Use of ISCR amendments is more likely at the Site due to the detection of PFAS which can be transformed into more toxic breakdown products by ISCO addition. As described above, implementation of this alternative would involve a pre-design investigation to accurately define the limits of the soils contaminated by CVOCs, PFAS (if present), and inorganic COCs to be treated. Design activities such as treatability, bench, tracer, and/or pilot testing would be performed to select the amendment(s) in appropriate quantities, and to avoid potential negative impacts to ongoing natural attenuation in groundwater and to LVC; building demolition to facilitate access for the soil mixing equipment; soil mixing and blending with the selected amendments using auger equipment; and regrading/restoration.

DEP considers the selected remedy to be more implementable than Alternatives 3 and 4, which would require excavation below the water table, that would involve pumping and disposal of contaminated groundwater. The offsite disposal alternative would require staging of soils prior to transport for offsite disposal in dump trucks.

The performance of the remedy would be assessed using post treatment sampling to verify amendment distribution and effectiveness at destroying and/or reducing the toxicity or mobility of the COCs.

The selected alternative is more cost effective and provides unique benefits which are expected to compliment the preferred groundwater remediation approach discussed below. This alternative will comply with ARARs, including antidegradation requirements, and EPA's Safe Drinking Water UIC Program. It is also expected to have a smaller carbon footprint and results in lower potential for erosion/sedimentation and fugitive air emissions than the other alternatives considered.

Engineering controls, including targeted capping, plantings, and stormwater BMPs, designed to protect LVC and reduce surface infiltration and contaminant migration, would be identified during the design phase and implemented as part of the groundwater remedy.

Completion of this alternative is expected to take four years and cost \$2.8M. Long-term O&M costs associated with engineering and institutional controls are incorporated into the OU2 Groundwater remedy.

ISCO/ISCR, coupled with soil mixing would meet the previously described RAOs and be protective of public health and the environment by addressing soil exposure pathways, based on a residential usage scenario, reducing contaminant transfer and migration to and by groundwater, and preventing erosion during construction and after regrading and/or restoration are completed.

OU2: GROUNDWATER

DEP has selected Alternative 3 – In Situ Injection (ISCO/ISCR/Bioremediation) to address COCs in groundwater resulting from Areas 1 and 9 shown on Figure 3, which have been identified as the primary sources of COC contamination at the Site. Use of ISCR amendments is more likely at the Site due to the detection of PFAS. Prior to implementation of this alternative, a pre-design investigation would be conducted to further evaluate the distribution of PFAS in groundwater, characterize the concentration and potential migration of Site COCs in the northeast corner of the Source Property, and establish the presence or absence of disputed COCs, related to releases at the Site, in groundwater. Design activities would determine the appropriate types and quantities of amendments to be used; establish the boundaries of treatment zones; determine the number, design, spacing and depths of injection points; identify necessary measures to ensure protection of LVC and the neighboring community from negative effects of remediation.

Implementation of this alternative would involve phased injection of amendments to treat the targeted groundwater source areas; engineering and/or ICs to mitigate Site impacts to LVC and address potential future human exposure to COCs in groundwater resulting from water well installation and/or VI; and long-term monitoring of engineering controls/ICs and ongoing natural attenuation.

Establishment of ICs as an initial step would immediately address the primary RAO to prevent potential future human exposure to Site-related COCs in accordance with a residential site-specific Act 2 Standard. Over time, implementation of Alternative 3 would achieve the other RAOs including reducing COC migration in groundwater across the Source Property boundary; reducing the diffuse discharge of COCs to LVC through construction of BMPs to reduce COC migration and discharge and a reduction in COC concentrations; and hastening retraction of the contaminant plume. Completion of the active (i.e., injection) phase would be evaluated through monitoring of amendment distribution and attainment of conditions suitable for continued anaerobic biological degradation of CVOCs. After completion of the active phase of remediation, long-term monitoring would continue to assure exposure pathways are not opened due to changes in conditions (i.e., new construction) and to evaluate progress toward attaining RAOs.

DEP considers Alternative 3 to be more implementable than hydraulic control and ISTT because no extracted water will require discharge and/or additional pre-treatment before discharge. It is also more cost effective than these other alternatives and would provide for quicker attainment of

RAOs than monitored natural attenuation alone. Preconstruction, construction, and active remedy implementation costs associated with the selected alternative would be approximately \$2.8M. Long-term post remedial costs are estimated to be \$2.5M, based on a PV calculation, resulting in a total estimated PV cost of \$5.3M.

The in situ injection alternative would comply with ARARs and be protective of human health and the environment primarily through assuring exposure pathway elimination via engineering controls and ICs. This alternative would also achieve RAOs by addressing the primary sources of COCs contamination in groundwater.

OU3: DRINKING WATER

DEP has selected Alternative 3 - Connection to the Existing Public Water Supply Waterline, Combined with Restrictions on the Use of Groundwater. Under alternative 3, a lateral connection would be installed from the existing waterline main to the affected residential property and the private water supply well would be abandoned as set forth in the description of that alternative, above. The selected alternative is a permanent solution that is protective of human health. The nearby existing public water infrastructure makes the selected alternative relatively easy to implement. Once connected to the waterline, the private well will be abandoned, therefore additional sampling will not be required. The action will comply with ARARs relating to safe drinking water standards.

Connection of the home to the existing public water supply would cost approximately \$24,000 and is more cost effective than continuing to operate, maintain, and monitor the existing POET.

Alternative 3 would protect public health by permanently eliminating exposure to Site-related COCs resulting from use of the impacted private well.

SUMMARY

In summary, DEP's selected remedy includes ISCO/ISCR, coupled with soil mixing to address unsaturated and saturated soils impacted by Site COCs (OU1), in situ injection of ISCO, ISCR or bioremediation amendments in the two primary CVOC source areas to address contaminated groundwater (OU2), and connection of the residence with an impacted private well to the existing public waterline (OU3).

In combination, implementation of these selected alternatives would protect public health and the environment and address potential exposure pathways by using engineering controls and ICs and connecting the affected home to the public waterline, reducing COC migration across the Source Property boundary, reducing migration and diffuse discharge of COCs to LVC, and hastening retraction of the groundwater contaminant plume by reducing source concentrations of COCs in soil and groundwater. The selected remedy would demonstrate attainment of residential Act 2 Standards, including background, Statewide health, and site-specific, as described in Section IV Cleanup Standards. The selected alternatives would ultimately aid in meeting anti-degradation requirements.

Implementation of these alternatives will be designed and implemented in a complimentary manner to avoid potential negative interactions, comport with the protections afforded under Article 1, Section 27 of the Pennsylvania Constitution, comply with ARARs, and avoid negative impacts to LVC. The total estimated PV cost of the selected final remedial response action is \$8.1M. A summary of the selected remedy costs is presented in Appendix D.

VIII. MAJOR CHANGES FROM THE PROPOSED RESPONSE

Section II.B. Site History was updated to discuss

- In response to comment 97: “*DEP’s statement that the degreaser was present in an “unlined” pit incorrectly implies that the degreaser was in a pit open to the environment.*” As stated in the comment, DEP referred to it as “an unlined, concrete subfloor pit”. A footnote was added to provide the definition of “unlined.”
- In response to comment 97: “*The administrative record confirms that the volume of the solvent AST was 4000 gallons, not 5000 gallons.*” DEP verified that the registration document included in the Administrative Record does list the tank to be 4,000 gallons and revised the AST description accordingly.
- The 2021 Investigation Memo was received by DEP on August 24, 2021. This document was included in Part II of the administrative record for the Site but was not considered during preparation of the AOA because it was submitted after the AOA was finalized. Soil sampling was conducted to follow up prior detections of inorganic parameters and groundwater sampling was performed to evaluate VOC concentrations across the Site area.
- The March 2022, PFAS sampling event that was performed by Roux on behalf of Johnson Matthey and Whittaker.

Section II.C. Release of Hazardous Substances was updated as follows

- Fluoride was detected in soils above its Act 2 Standard in 10 of the borings located within 4 AOCs identified by GES in May 2021.
- PFOA was added as a COC after it was detected in groundwater and surface water in March 2022. Additional characterization is necessary to determine the presence of PFAS in soil.
- Hexavalent Chromium soil sample results from May 2021 were discussed.
- Total Chromium and hexavalent Chromium were removed as COCs in soil.

Section IV. Cleanup Standards was updated to clarify that demonstration of attainment of a residential Act 2 Standard would be pursued based on the anticipated end use of the Source Property.

Section VI. Analysis of Alternatives was updated to further clarify each alternative description and its compliance with ARARs based on public comments received. Additionally, the differences between which activities are considered pre-design investigations and design activities are described. The impact of the presence of PFAS on the cost of each alternative was also added.

IX. RESPONSE TO PUBLIC COMMENTS

DEP's response to public comments concerning the selection of this response action is filed in the Administrative Record.

X. DEP APPROVALS

FOR THE COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Robert M. DiGilarmo II
Acting Deputy Secretary
Office of Field Operations

09/12/2022

Date

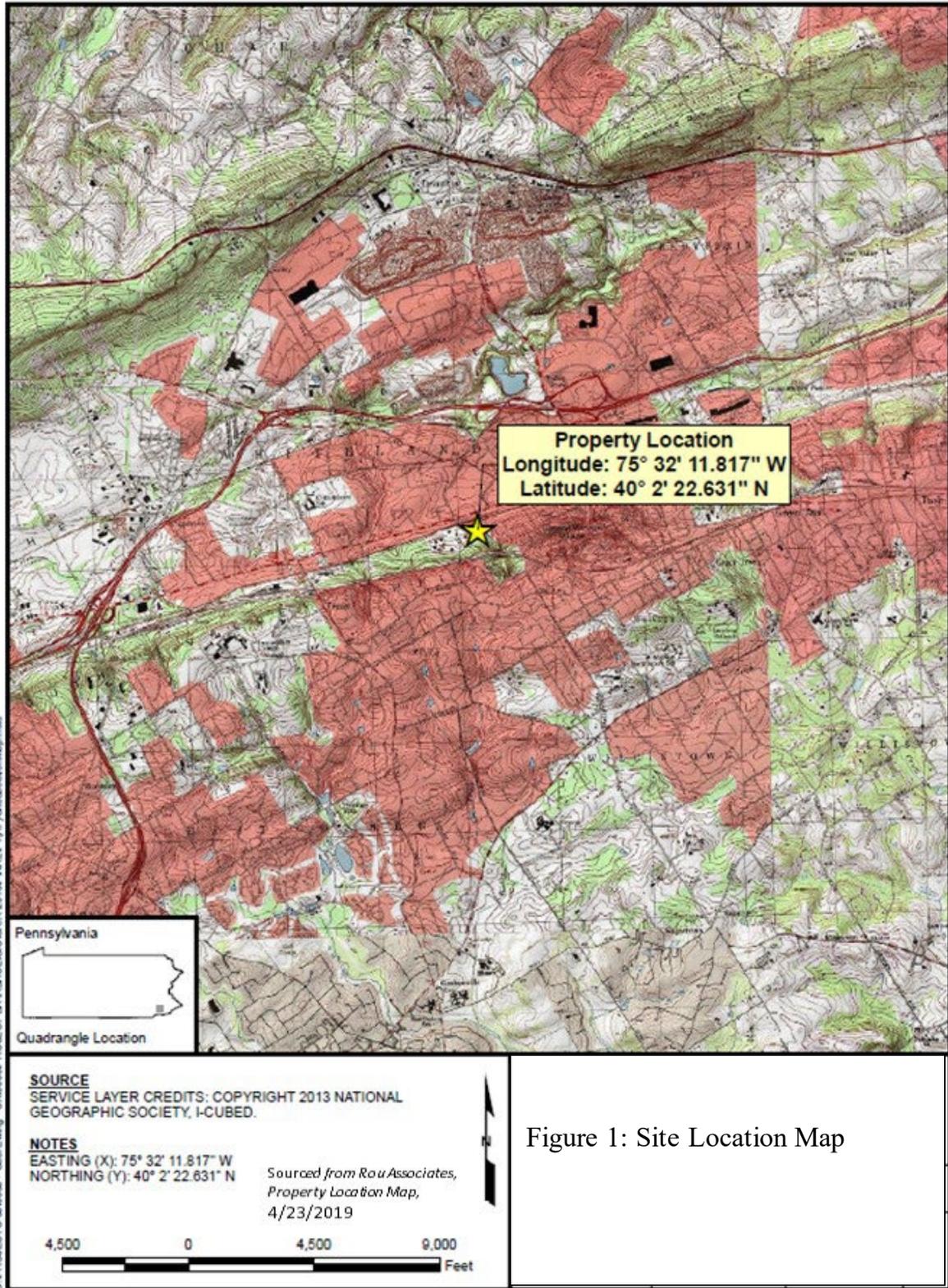
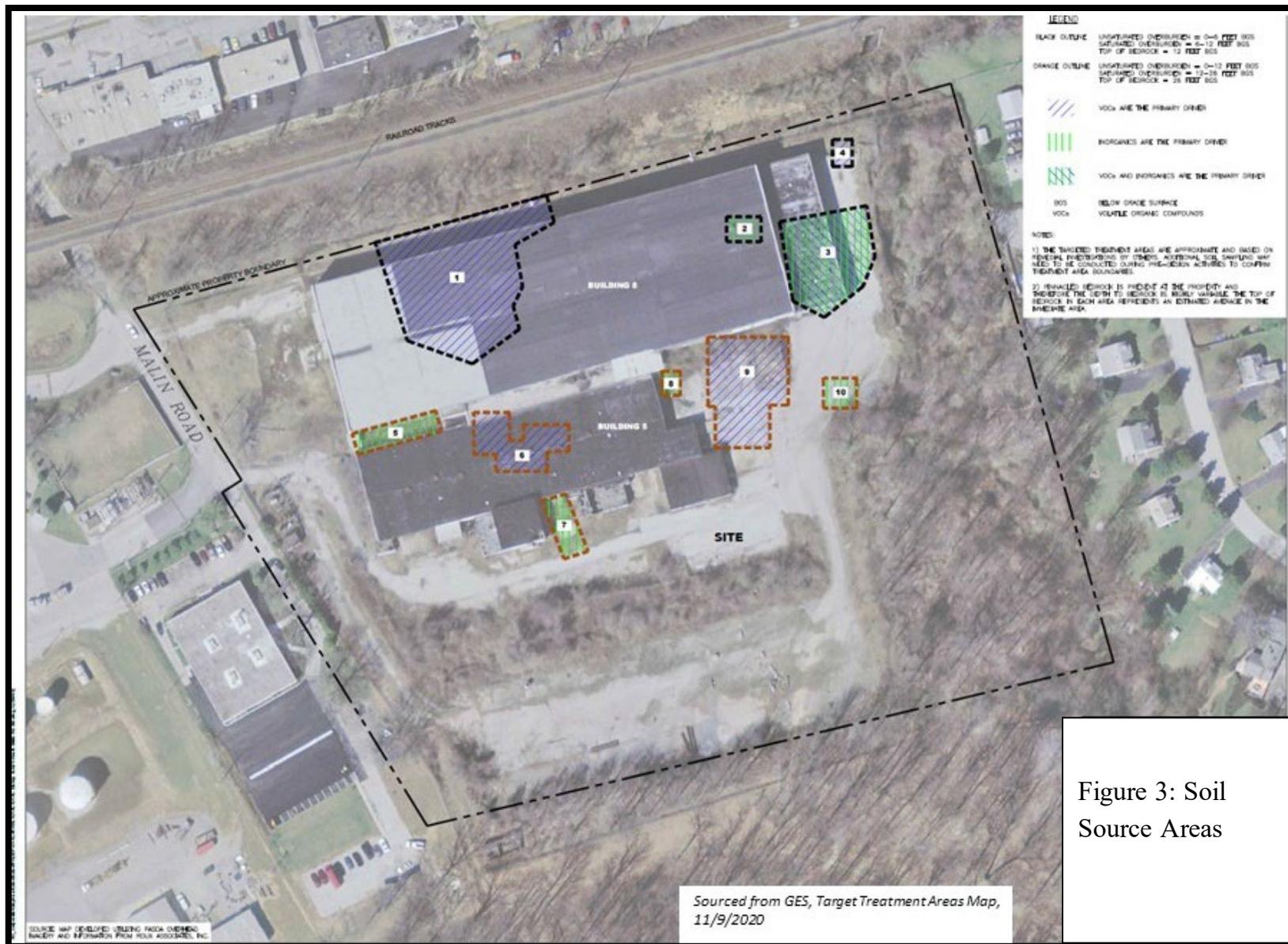
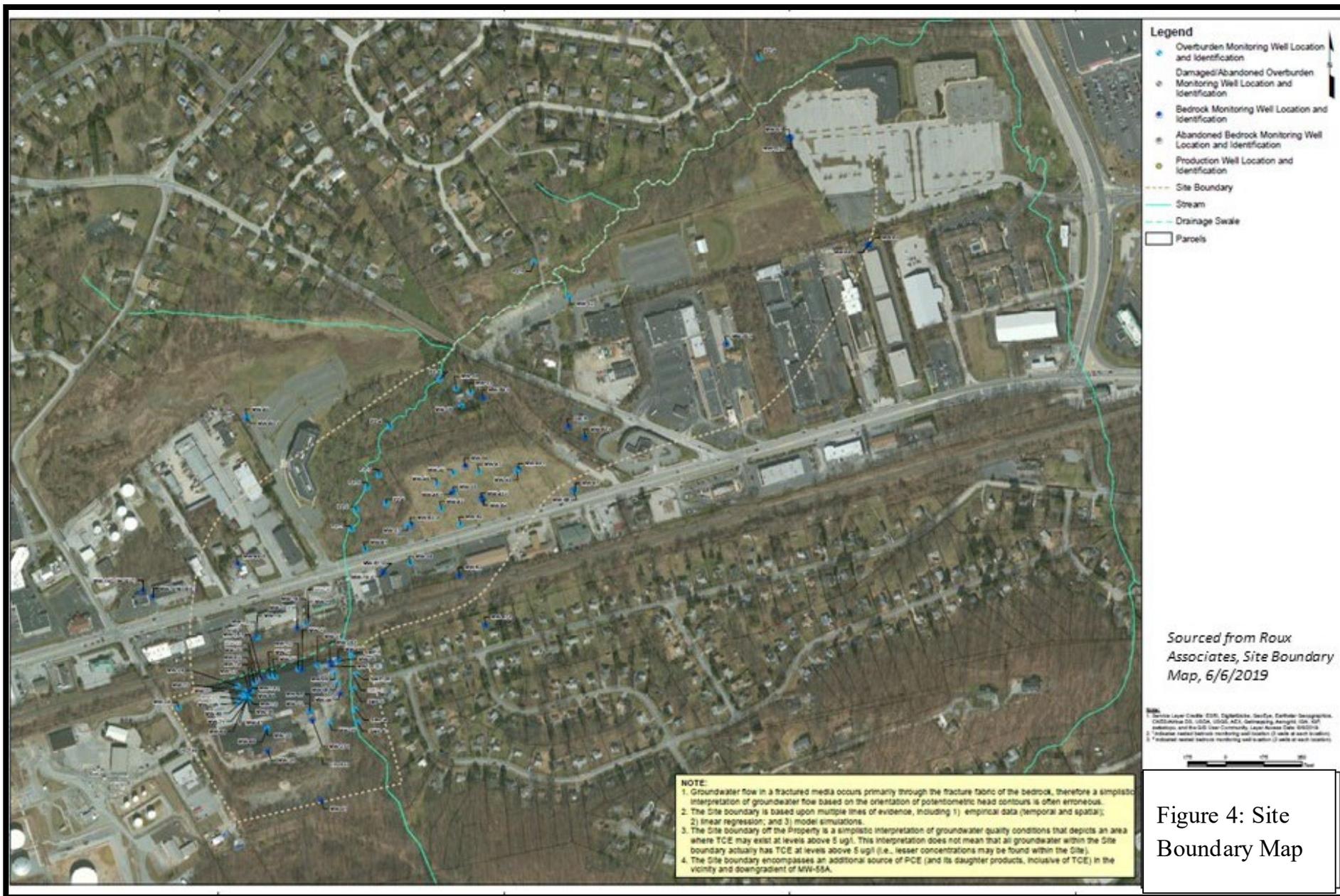


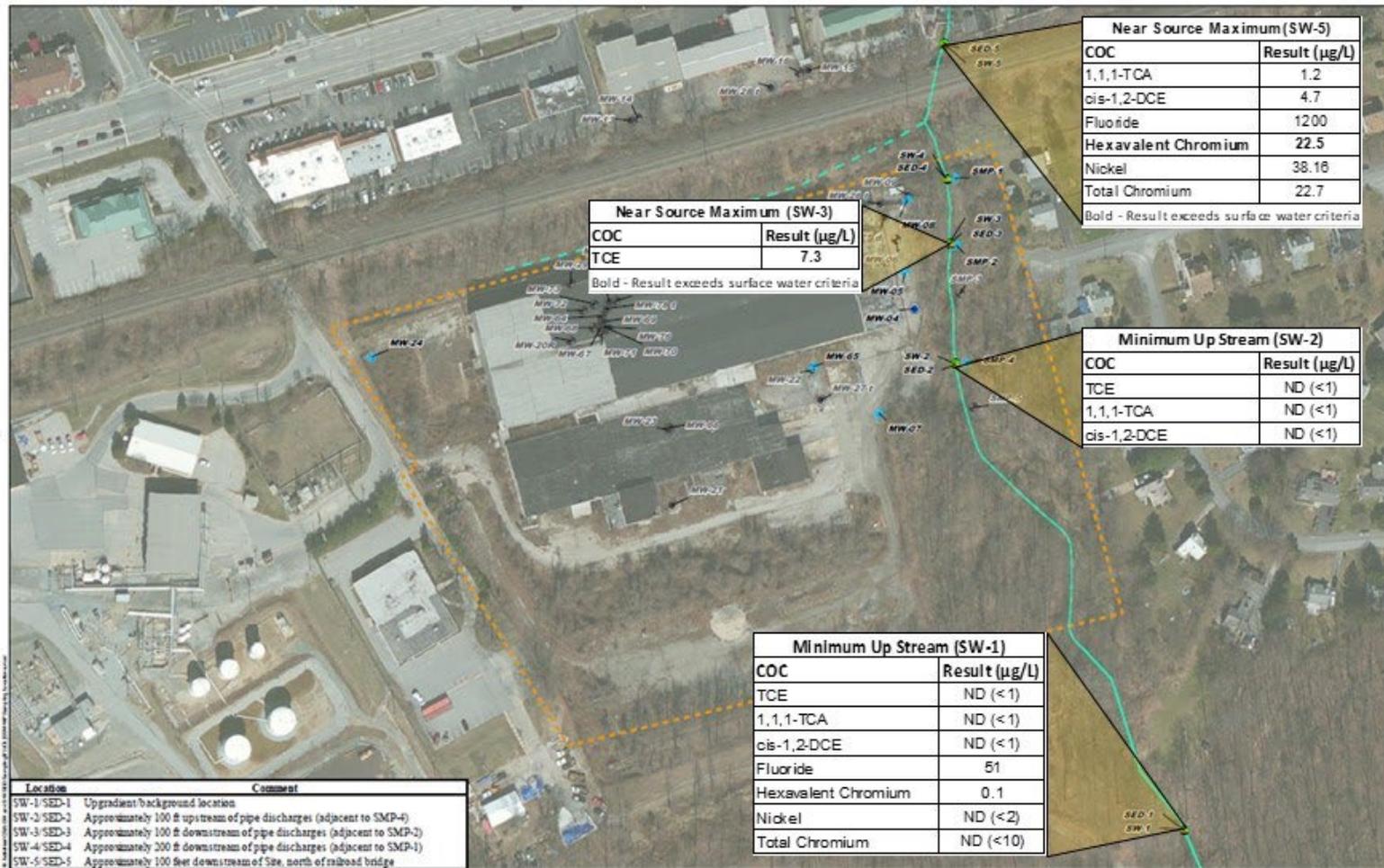
Figure 1: Site Location Map







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Adapted from Discharge to Surface Water Work Plan
Sample Locations, Roux Associates, 6/26/2018

Figure 5: LVC Dry Conditions Surface Water Data Comparison

Appendix A: A Summary of ATSDR Information for COCs

COC	Health Effects	Cancer Classification
CVOCs		
TCE	<p>Exposure to moderate amounts may cause headaches, dizziness, and sleepiness; large amounts may cause coma and even death.</p> <p>Eating or breathing high levels may damage some of the nerves in the face. Exposure to high levels can also result in changes in the rhythm of the heartbeat, liver damage, and evidence of kidney damage.</p> <p>Skin contact with concentrated solutions can cause skin rashes.</p>	<p>Department of Health and Human Services (“DHHS”): human carcinogen.</p> <p>The International Agency for Research on Cancer (“IARC”): carcinogenic to humans.</p> <p>EPA: carcinogenic to humans by all routes of exposure.</p>
1,1,1-TCA	<p>Inhaling high levels can cause dizziness and lightheadedness. Exposure to much higher levels can cause unconsciousness and other effects.</p> <p>There are no studies in humans that determine whether eating contaminated food or drinking contaminated water could harm health. Placing large amounts in the stomachs of animals has caused effects on the nervous system, mild liver damage, unconsciousness, and even death.</p> <p>Skin contact might cause some irritation. Studies in animals suggest that repeated exposure of the skin might affect the liver and that very large amounts may cause death. These effects occurred only when evaporation was prevented.</p>	<p>IARC: not classifiable as to its carcinogenicity in humans.</p> <p>EPA: not classifiable as to its carcinogenicity in humans.</p>
1,1,2-TCA	<p>No information is available on health effects of breathing or swallowing 1,1,2-TCA. Applying to the skin resulted in stinging and burning.</p> <p>When animals breathed high levels, it affected the liver, kidneys and nervous system. When animals swallowed contaminated food or water, effects on the stomach, blood, liver, kidneys, and nervous system were seen.</p>	<p>IARC: not classifiable as to its carcinogenicity to humans.</p>
1,1-DCA	<p>It affects the function of the nervous system.</p>	<p>EPA: possible human carcinogen.</p>
1,1-DCE	<p>Breathing high levels can affect the liver, kidney, and central nervous system. Animals that ingested high levels had damaged livers, kidneys, and lungs.</p>	<p>EPA: possible human carcinogen.</p>
1,2-DCA	<p>Ingesting or inhaling large amounts of 1,2-DCA has reportedly caused nervous system disorders, liver and kidney diseases, and lung effects.</p>	<p>DHHS: reasonably be expected to cause cancer.</p> <p>IARC: possible human carcinogen.</p> <p>EPA: probable human carcinogen.</p>

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COC	Health Effects	Cancer Classification
Carbon Tetrachloride	High exposure to carbon tetrachloride can cause liver, kidney, and central nervous system damage.	DHHS: may reasonably be anticipated to be a carcinogen. IARC: possibly carcinogenic to humans. EPA: a probable human carcinogen.
Chloromethane	Exposure to high levels of chloromethane can cause serious problems to the nervous system, including convulsions and coma. It can also affect the liver, kidneys, and heart.	EPA: a possible human carcinogen.
cis-1,2-DCE	Animals that ingested extremely high doses died. Lower doses caused effects on the blood, such as decreased numbers of red blood cells, and also effects on the liver.	EPA: not classifiable as to its human carcinogenicity.
Methylene Chloride	Breathing large amounts may cause unsteadiness, dizziness, nausea and tingling or numbness of fingers and toes. Smaller amounts cause a person to become less attentive and less accurate in tasks requiring hand-eye coordination. Skin contact causes burning and redness of the skin.	DHHS: reasonably anticipated to be a cancer-causing chemical. EPA: a probable cancer-causing agent in humans. World Health Organization (“WHO”): may cause cancer in humans.
PCE	Breathing high levels for a brief period may cause dizziness or drowsiness, headache, and incoordination; higher levels may cause unconsciousness and even death. Exposure for longer periods to low levels may cause changes in mood, memory, attention, reaction time, and vision. Studies in animals have shown liver and kidney effects, and changes in brain chemistry.	DHHS: reasonably anticipated to be a human carcinogen. IARC: probably carcinogenic to humans. EPA: likely to be carcinogenic to humans by all routes of exposure.
trans-1,2-DCE	When animals breathed high levels of trans-1,2-DCE, their livers and lungs were damaged, and the effects were more severe with longer exposure times. Animals that breathed very high levels of trans-1,2-DCE had damaged hearts. Animals that ingested extremely high doses of trans-1,2-DCE died.	No EPA cancer classification is available.
Vinyl Chloride	Breathing high levels of for short periods of time can cause dizziness, sleepiness, unconsciousness, and at extremely high levels can cause death. Breathing for long periods of time can result in permanent liver damage, immune reactions, nerve damage, and liver cancer. The effects of drinking high levels are unknown. Skin contact can cause numbness, redness, and blisters.	DHHS: known carcinogen.

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COC	Health Effects	Cancer Classification
Other Organic Compounds		
1,2,4-TMB ¹	Effects on the nervous, respiratory, and hematological (i.e., blood) systems have been reported in occupationally- and residentially-exposed humans, but these effects were observed following exposure to complex mixtures containing TMB isomers, thus making it difficult to determine the contribution of each TMB isomer to the observed health effects.	There is inadequate information to evaluate the carcinogenicity of TMBs.
1,4-Dioxane	Exposure to high levels in the air can result in nasal cavity, liver, and kidney damage. Ingestion or dermal contact with high levels can result in liver and kidney damage.	DHHS: reasonably anticipated to be a human carcinogen.
Benzene	Breathing benzene can cause drowsiness, dizziness, and unconsciousness; long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia.	DHHS: known carcinogen. IARC: carcinogenic to humans. EPA: carcinogenic to humans.
Bromomethane	Breathing can harm your respiratory tract (nose and lungs) and nervous system. In workers, bromomethane in air has caused damage to the lungs and signs of nervous system damage, such as dizziness, muscle weakness, and seizures.	DHHS: has not classified for carcinogenicity in humans. IARC: not classifiable as to human carcinogenicity. EPA: not classifiable as to human carcinogenicity.
MTBE	Breathing small amounts for short periods may cause nose and throat irritation. There are no data on the effects in people of drinking MTBE. Studies with rats and mice suggest that drinking MTBE may cause gastrointestinal irritation, liver and kidney damage, and nervous system effects.	DHHS: not classifiable as to its carcinogenicity to humans. IARC: not classifiable as to its carcinogenicity to humans. EPA: not classifiable as to its carcinogenicity to humans.

¹ Information was unavailable on ATSDR's website. Information was obtained from EPA's Integrated Risk Information System website.

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COC	Health Effects	Cancer Classification
PFOA ²	The human health effects from exposure to low environmental levels of PFOA are unknown. PFOA can remain in the body for long periods of time. In laboratory animals given large amounts, PFOA can affect growth and development, reproduction, and injure the liver. More research is needed to assess the human health effects of exposure to PFOA	DHHS: has not yet evaluated whether PFOA and other perfluoroalkyls can cause cancer. IARC: classified PFOA as possibly carcinogenic (causing cancer) to humans, EPA: classified PFOA and PFOS as having suggestive evidence of carcinogenic potential in humans.
Inorganics		
Antimony	Studies in workers, who are typically exposed to higher levels of antimony, show that breathing antimony dust can cause heart and lung problems, stomach pain, diarrhea, vomiting, and stomach ulcers. Swallowing large doses of antimony can cause vomiting in people.	DHHS: antimony trioxide ³ to be reasonably anticipated to be a human carcinogen. IARC: antimony trioxide is possibly carcinogenic to humans and that antimony trisulfide is not classifiable.
Arsenic	Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer.	DHHS: known human carcinogen. IARC: carcinogenic to humans. EPA: known human carcinogen.
Cobalt	Cobalt can benefit or harm human health. Cobalt is beneficial for humans because it is part of vitamin B12. Exposure to high levels of cobalt can result in lung and heart effects and dermatitis.	IARC: possibly carcinogenic to humans.
Fluoride	Human studies of people exposed to high concentrations of fluoride through long-term ingestion suggest that fluoride may cause harmful effects to bone density and the skeletal system.	IARC: carcinogenicity to humans cannot be classified.
Hexavalent Chromium	Animal studies suggest that effects associated with ingestion of hexavalent chromium may include stomach and intestinal tumors, irritation, and ulcers of the digestive tract, anemia, and fetal development effects.	DHHS: known human carcinogen. IARC: known human carcinogen. EPA: known human carcinogen.

² https://www.cdc.gov/biomonitoring/PFOA_FactSheet.html & <https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=1116&toxid=237>

³ The nature of Antimony or its compounds present at the Site is not fully characterized

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COC	Health Effects	Cancer Classification
Lead	<p>The effects are the same whether it enters the body by breathing it in or eating it. Lead can affect almost every organ and system in the body. The nervous system is the main target for lead poisoning. Long-term exposure can result in decreased learning, memory, and attention, and weakness in fingers, wrists, or ankles. Lead exposure can cause anemia and damage to the kidneys. It can also cause increases in blood pressure. Exposure to high lead levels can severely damage the brain and kidneys and can cause death. In pregnant women, exposure to high levels of lead may cause a miscarriage. In men, it can cause damage to reproductive organs.</p>	<p>DHHS: reasonably anticipated to be human carcinogens. IARC: probably carcinogenic to humans. EPA: a probable human carcinogen.</p>
Manganese	<p>Manganese is an essential nutrient. Eating a small amount of it each day is important to stay healthy.</p> <p>The most common health problems in workers exposed to high levels involve the nervous system.</p> <p>Exposure to high levels of manganese in air can cause lung irritation and reproductive effects.</p> <p>Nervous system and reproductive effects have been observed in animals after high oral doses of manganese.</p>	<p>EPA: existing scientific information cannot determine whether or not excess manganese can cause cancer.</p>
Nickel	<p>Animal studies suggest that exposure to high levels of nickel could cause harmful effects to reproduction, liver, kidneys, blood, and stomach.</p>	<p>DHHS: nickel metal -may reasonably be anticipated to be a carcinogen. Nickel compounds - known human carcinogens.</p>
Thallium	<p>Breathing high levels of thallium may result in effects on the nervous system, while ingesting high levels of it results in vomiting, diarrhea, temporary hair loss, and other effects.</p>	<p>DHHS: IARC: not classifiable as to its carcinogenicity to humans. IARC: not classifiable as to its carcinogenicity to humans. EPA: not classifiable as to its carcinogenicity to humans.</p>
Vanadium	<p>Nausea, mild diarrhea, and stomach cramps have been reported in people who have been exposed. A number of effects have been found in animals ingesting vanadium compounds including decreases in the number of red blood cells, increased blood pressure, and mild neurological effects. The amounts of vanadium given in these animal studies that resulted in harmful effects are much higher than those likely to occur in the environment.</p>	<p>DHHS: not classified as to its human carcinogenicity. EPA: not classified as to its human carcinogenicity.</p>

Appendix B: Applicable, or Relevant and Appropriate Requirements (“ARARs”)

ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
ENVIRONMENTAL CLEANUP AND BROWNFIELDS							
Comprehensive Environmental Response, Compensation and Liability Act of 1980 (“CERCLA”)	42 U.S. Code § 9601 <i>et seq.</i>	The Federal Superfund program, administered by the U.S. EPA is designed to investigate and clean-up sites contaminated with hazardous substances.			X	Relevant & Appropriate	RI and FS were completed in accordance with CERCLA requirements.
Hazardous Sites Cleanup Act (Act 108)	35 P.S. § 6020.101 <i>et seq.</i>	Provides means for funding and enforcement at response and remediation cleanups.			X	Applicable	The Site is on Pennsylvania’s (“PA’s”) priority list, and the remedial action is being proposed in accordance with HSCA.
Land Recycling and Environmental Remediation Standards Act (“Act 2”)	35 P.S. § 6026.101 <i>et seq.</i>	Provides a statute and regulations for establishing environmental remediation standards: background standard, Statewide health standards, site-specific standards (“SSS”).	X			Applicable	The remedial response will achieve a combination of Act 2 standards.
Administration of the Land Recycling Program, Chapter 250	25 Pa. Code § 250.250.1 <i>et seq.</i>						
Land Recycling Program Technical Guidance Manual, January 19, 2019	Document Number: 261-0300-101	Provides suggestions and examples of how to best approach site characterization, remediation and demonstration of attainment.	X		X	TBC	Chemical-specific: discusses pathway elimination to achieve SSS. Action-specific: discusses vapor intrusion and groundwater monitoring.
The PA Uniform Environmental Covenants Act, Act No. 68 of 2007 (“UECA”)	27 Pa. C.S. §§ 6501 – 6517	Provides a standardized process for creating, documenting and assuring the enforceability of activity and use limitations on contaminated sites.				X	Applicable
Administration of UECA, Chapter 253	25 Pa. Code § 253 <i>et seq.</i>						

¹ Chemical-specific requirements establish legal health or risk-based concentration limits or ranges, in various environmental media for specific hazardous substances, pollutants, or contaminants.

² Location-specific requirements set restrictions on activities depending on the characteristics of a site.

³ Action-specific requirements or design specifications set controls or restrictions on particular kinds of activities related to management of hazardous substances, pollutants, or contaminants. These requirements are triggered not by the specific chemicals present at a site but rather by the particular remedial activities that are selected to accomplish a remedy. Since there are usually several alternative actions for any remedial site, very different requirements can come into play.

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
CLEAN WATER/WATERWAYS & WETLANDS							
The Clean Water Act	33 U.S.C. §1251 <i>et seq.</i>	Establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters.	X			Applicable	Stormwater discharges will not occur that would contain toxic or hazardous pollutants as defined in sections 307 and 311 of the Clean Water Act.
The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended	35 P.S. §§ 691.1 – 691.1001	An act to preserve and improve the purity of the waters of the Commonwealth for the protection of public health, animal and aquatic life, and for industrial consumption, and recreation.	X	X	X	Applicable	Applicable to remedial actions that may impact the waters of the Commonwealth i.e. earth disturbance, direct discharge, etc.
		Act 162 of 2014 amendment to the Clean Streams Law addresses buffer requirements in PA regulations, found in 25 Pa Code Chapter 102.		X	X	Applicable	Applicable to construction activities within 150 ft. of a water of the Commonwealth.
General Provisions, Chapter 91	25 Pa. Code § 91.1 <i>et seq.</i>	Establishes specific application requirements and conditions for the approval and permitting of the construction and operation of waste water treatment and disposal projects.	X		X	Applicable	§ 91.33: any incident causing or threatening pollution needs to be immediately reported. § 91.34: Persons engaged in an activity which includes the impoundment, transportation, storage, application or disposal etc. of pollutants shall take necessary measures to prevent the substances from directly or indirectly reaching waters of this Commonwealth. §§ 91.51-52 relates to underground disposal of wastes.
National Pollutant Discharge Elimination System (“NPDES”) Permitting, Monitoring and Compliance, Chapter 92a	25 Pa. Code § 92a.1 <i>et seq.</i>	Establishes criteria for the content of NPDES permit applications, effluent standards, monitoring requirements, standard permit conditions, public notification procedures, etc.	X		X	Applicable	§ 92a.54: Discharges not authorized include discharges to surface waters classified as Exceptional Value (EV) waters under 25 Pa. Code Chapter 93 or discharges containing toxic or hazardous pollutants.

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions		
Water Quality Standards, Chapter 93	25 Pa. Code § 93.1 <i>et seq.</i>	Establishes specific standards for the quality of PA's waters and includes specific water quality criteria and designated water use protection for each stream in PA.	X			X	Applicable	Any discharge of treated groundwater to surface water during the remedial action will abide by the Water Quality Criteria including Table 5 and will not impair the designated uses of surface waters at the Site. All of the water uses listed in §93.3 are protected to existing uses.	
Wastewater Treatment Requirements, Chapter 95	25 Pa. Code § 95 <i>et seq.</i>	Sets forth waste treatment requirements for dischargers, including developing quality standards for discharges to acid impregnated streams and acid-bearing waters.	X			X	Applicable	§ 95.2: Discharges of treated groundwater to the surface water during the remedial action will meet pH requirements.	
Water Quality Standards Implementation, Chapter 96	25 Pa. Code § 96 <i>et seq.</i>	Describes water quality standards implementation.	X			X	Relevant & Appropriate	Existing and designated surface water uses shall be protected. § 96.6: Discharges of treated groundwater to the surface water during the remedial action will meet requirements related to thermal discharges.	
Water Quality Toxics Management Strategy Statement of Policy, Chapter 16	25 Pa. Code § 16 <i>et seq.</i>	Establishes discharge criteria, and analytical methods for toxic substances.	X			X	Applicable	May apply to contaminants that are not currently listed in Chapter 93 Table 5	
The Dam Safety and Encroachments Act, Act of 1978, P.L. 1375, as amended	32 P.S. § 693.1 <i>et seq.</i>	Sets forth provisions for the regulation and supervision of dams, reservoirs, water obstructions and encroachments in waters of the Commonwealth, including wetlands.				X	X	Applicable	§ 105.17 defines exceptional value wetlands that deserve special protections. § 105.18a. Permitting of structures and activities in wetlands. Additional steps may be needed to ensure remedial activities do not impact nearby wetlands.
Dam Safety and Waterway Management, Chapter 105	25 Pa. Code § 105.1 <i>et seq.</i>								
The Flood Plain Management Act, Act of October 4, 1978, P.L. 851, No. 166	32 P.S. § 679.101 <i>et seq.</i>	Sets forth provisions for the regulation of obstructions located in the 100-year floodplain as delineated by FEMA Flood Hazard Boundary Maps.				X		Relevant & Appropriate	May apply to any earth disturbance activity in a floodplain.
Flood Plain Management, Chapter 106	25 Pa. Code § 106.1 <i>et seq.</i>								

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
The Stormwater Management Act, October 4, 1978, P.L. 864 (Act 167), as amended	32 P.S. § 680.1 <i>et seq.</i>	Sets forth provisions that impose requirements on all earth disturbance activities.		X	X	Applicable	Sediment & erosion control features will need to be implemented before start of intrusive earth disturbance activities.
Erosion and Sediment Control, Chapter 102	25 Pa. Code § 102.1 <i>et seq.</i>				X		
Erosion and Sediment Pollution Control Program Manual, March 2012	Document Number: 363-2134-008	Provides guidance and procedures on ways to minimize accelerated erosion and resulting sediment pollution to surface waters.			X	TBC	
PA Stormwater Best Management Practices Manual, December 30, 2006	Document Number: 363-0300-002	Ensures effective stormwater management to minimize the adverse impacts of stormwater on groundwater and surface water resources.			X	TBC	Relevant to engineering controls designed to protect waters of the Commonwealth.
Water Quality Antidegradation Implementation Guidance, November 29, 2003	Document Number: 391-0300-002	Aides with the implementation of the Antidegradation Program in PA.		X	X	TBC	Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use.
Implementation Plan for Act 162 of 2014, December 20, 2014	Document Number: 310-2135-001	Provides guidance for interpretation, implementation and compliance with Act 162.		X	X	TBC	Applies to individual NPDES permits for stormwater discharges associated with construction activities who proceed under 35 P.S. § 691.402(c)(1)(ii) in utilizing alternatives to riparian buffer best management practices (“BMPs”) to address runoff.
Frequently Asked Questions for Act 162 of 2014 Implementation, December 18, 2014				X	X	TBC	
Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration, March 21, 2015	Document Number: 310-2135-002	Outlines the equivalency demonstration criteria and process related to the riparian buffer or riparian forest buffer equivalency demonstration required by Act 162.		X	X	TBC	
Riparian Buffer or Riparian Forest Buffer Offsetting Guidance, March 21, 2015	Document Number: 310-2135-003	Provides guidance and procedures for meeting the requirements of Act 162 as it relates to the riparian buffer or riparian forest buffer offsetting requirements.		X	X	TBC	

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
Waste Management							
Resource Conservation and Recovery Act (RCRA), Part 261 -Identification and Listing of Hazardous Waste	40 CFR Part 261, Subparts C & D	Part 261 defines those solid wastes which are subject to regulations as characteristic or listed hazardous wastes.	X			Applicable	Applicable to determining whether wastes are considered hazardous under RCRA.
RCRA Manifesting, Transport and Recordkeeping Requirements	40 CFR 262, Subparts B & C	Applies to management of hazardous wastes prior to transport.			X	Applicable	Applicable if remedial activities include the off-site transport of hazardous waste.
RCRA Subtitle C, Hazardous Waste Treatment Facility Design and Operating Standards for Treatment and Disposal Systems.	40 CFR § 264.310	Develops standards for hazardous waste treatment, storage and landfill cover.			X	Applicable	Applicable if remedial activities include the management of hazardous wastes at treatment and disposal facilities.
RCRA Subtitle D, Nonhazardous Waste Management Standards	40 CFR § 258.60	Develops standards for the closure of nonhazardous waste landfills.			X	Applicable	Applicable if remedial activities include the management of non-hazardous wastes.
Solid Waste Management Act, Act 97 of 1980	35 P.S. §§ 6018.101-6018.1003	Provides for the planning and regulation of solid waste storage, collection, transportation, processing treatment, and disposal.	X	X	X	Applicable	Applicable for all remedial actions that involve solid waste treatment, storage, transportation, and/or disposal activities.
Hazardous Waste Management Regulations	Article VII, Chapters 260a-270a, including incorporated parts of 40 CFR 260-270.	Applies to the identification and listing, generation, transportation, storage, treatment, and disposal of hazardous waste in PA authorized by RCRA.	X			Applicable	Applicable for all remedial actions that involve hazardous waste treatment, storage, transportation, and/or disposal activities.
Residual Waste Management-General Provisions, Chapter 287	25 Pa. Code §§ 287.1- 287.666	Specifies general procedures, definitions and rules for the generation, management, and handling of residual waste.	X		X	Applicable	Many of the remedial alternatives considered involve generation of residual waste. - In-situ/ex-situ treatment processes need to meet permit-by-rule requirements; - Capping standards may apply if closing in place; - Soil/waste remedial actions may involve transportation and/or disposal of residual waste on-/off-site.

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
Residual Waste Landfills, Chapter 288	25 Pa. Code §§ 288.1 - 288.625	Sets forth application and operating requirements for residual waste landfills and disposal impoundments.	X		X	Applicable	Closure/capping standards may apply if closing in place.
Residual Waste Disposal Impoundments, Chapter 289	25 Pa. Code §§ 289.1-289.557				X	Applicable	
Management of Fill Policy, January 16, 2021	Document Number: 258-2182-773	Provides DEP's procedures for determining whether material is clean fill or regulated fill and their acceptance and operation criteria.			X	TBC	Fill that is used for backfilling excavated areas will need to meet the acceptance and operation standards for clean fill or regulated fill as defined in this document.
SAFE DRINKING WATER							
National Primary Drinking Water Regulations, Maximum Contaminant Levels ("MCLs")	40 CFR § 141.61	Establishes primary drinking water regulations pursuant to section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act, 42 U.S.C. § 300f <i>et seq.</i>	X			Relevant & Appropriate	Applies to drinking water supplies within the site boundary protected by OU2 ICs and addressed by OU3.
Safe Drinking Water Act ("SDWA") of 1974	42 U.S.C. § 300f <i>et seq.</i>	Establishes requirements for the Underground Injection Control ("UIC") program. Describes the minimum Federal requirements for injection operations and the sections of the SDWA that address injection.			X	Applicable	Remedial Alternatives involving injections would need to comply with these regulations.
PA Safe Drinking Water Act, Act of May 1, 1984, P.L. 206	35 P.S. § 721.1 <i>et seq.</i>	Sets forth drinking water quality standards at least as stringent as Federal standards: MCLs and additional state requirements. Establishes requirements for public water systems permit design and construction, source quality, and siting requirements.	X		X	Applicable	<ul style="list-style-type: none"> - Chemical-Specific: One residential well is impacted above MCLs. - Action-Specific: Standards would have to be considered during construction of waterline main &/or lateral.
Safe Drinking Water, Chapter 109	25 Pa. Code § 109 <i>et seq.</i>		X		X	Applicable ⁴	
Public Water Supply Manual - Part II Community System Design Standards, May 6, 2006	Document Number: 383-2125-108	Part II provides detailed design and construction standards for all Community Water Supplies except bottled water systems, bulk water			X	TBC	

⁴ - DEP's proposed MCLs for PFOA and PFOS, are TBCs

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
		haulers, vended water systems, and retail water facilities.					
Underground Injection Control Program, Part 144	40 CFR Part 144	Provides minimum requirements for the UIC program promulgated under the SDWA.				Applicable	Remedial Alternatives involving injections would need to comply with these regulations.
Criteria and Standards, Part 146	40 CFR Part 146	Includes technical standards for various classes of injection wells.			X		
State Underground Injection Control Programs, Part 147	40 CFR Part 147	Outlines the applicable UIC programs for each state.					
Air Quality							
National Emissions Standards for Hazardous Air Pollutants: Site Remediation, promulgated under Section 112 of the Clean Air Act of 1970, as amended ("CAA"), 42 U.S. C. § 74122	40 CFR Part 63 Subpart GGGGG	Establishes national emissions limitations and Maximum Achievable Control Technology ("MACT") standards for hazardous air pollutants ("HAPs") emitted from site remediation activities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations and work practice standards.	X			Applicable	Any vapor emissions during the remedial actions will be controlled and monitored.
National Ambient Air Quality Standards ("NAAQS"), promulgated under Sections 108 and 109 of the CAA, 42 U.S.C. §§ 7408-09	40 CFR Part 50	These NAAQs regulate six criteria air pollutants.	X			Applicable	Three of the criteria pollutants - carbon monoxide, nitrogen dioxide, and sulfur dioxide - may be generated in small amounts during the implementation of in situ thermal treatment
The Air Pollution Control Act, Act of January 8, 1960, P.L. 2119	35 P.S. § 4001, <i>et seq.</i>	Provides for the better protection of the health, general welfare and property of the people of the Commonwealth by the control, abatement, reduction and prevention of the pollution of the air by smokes, dusts, fumes, gases, odors, mists, vapors, pollens and similar matter, or any combination, thereof.	X		X	Applicable	Any vapor emissions during the remedial action will be controlled and monitored.

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
Standards for Contaminants, Chapter 123	25 Pa. Code § 123.1 <i>et seq.</i>	Sets forth requirements for fugitive emissions, including open burning and demolition activities; establishes specific limitations for particulate matter, sulfur dioxide, odor, and visible emissions.	X			Applicable	Fugitive dust emissions generated during remedial activities that involve excavation will need to be controlled (123.1 & 123.2). Odor emissions (123.31), as well as visible emissions (123.41) may also apply, depending on the controls and activity on Site.
National Emission Standards for Hazardous Air Pollutants (“NESHAP”), Chapter 124	25 Pa. Code § 124.1 <i>et seq.</i>	Adopts Federal NESHAP standards (40 CFR Part 61, Subpart M) by reference.			X	Applicable	Any building demolition is subject to the Asbestos NESHAP, and will require an inspection for asbestos, notification to DEP and EPA, and possible abatement, if asbestos is found, prior to the demolition.
Construction, Modification, Reactivation and Operation of Sources, Chapter 127	25 Pa. Code § 127.1 <i>et seq.</i>	Requires the use of Best Available Technology (“BAT”) for control of new sources, plan approval and operating permit requirements, and special requirements for sources in nonattainment areas.			X	Applicable	Any controls (carbon adsorber, thermal treatment, air strippers) may require permitting under 127.11. Remediation activities may be exempt under the Air Quality Permit Exemption list (Doc #275-2101-003) but generally requires the DEP’s approval to proceed without a plan approval or permit.
Air Quality Permit Exemptions, July 26, 2003, August 10, 2013 for Category No. 33 and Category No. 38 Exemptions	Document Number: 275-2101-003	Provides criteria for sources and physical changes to sources determined to be eligible for permitting exemptions as sources of minor significance.			X	TBC	
Sampling and Testing, Chapter 139	25 Pa. Code § 139.1 <i>et seq.</i>	Sets forth requirements for sampling of facilities, sampling methods and analytical procedures.			X	Applicable	Sampling and test methods may apply if a treatment system is employed. At that time, any sampling or testing would be dictated by the approval provided by DEP, whether it is in a permit or an exemption approval. § 139.14. Emissions of VOCs.
Asbestos Occupations Accreditation and Certification Act of 1990, P.L. 805, No. 194	63 P.S. §§ 2101—2112	Requires a minimum five-day notification of any asbestos project (Section 8) and certification for asbestos contractors and certain occupations (Sections 3 -5)			X	Applicable	Applies to demolition work associated with OU1 alternatives if asbestos is identified.

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ARARs	Citation/Reference	Description	Chemical ¹	Location ²	Action ³	Status	Applicability to Proposed Remedial Actions
Other							
Policy for Pennsylvania Natural Diversity Inventory (“PNDI”) Coordination During Permit Review and Evaluation, May 25, 2013	Document Number: 021-0200-001	The PNDI coordination effort facilitates the avoidance and minimization of impacts to threatened and endangered species and special concern species where applicable in PA.		X		TBC	The PNDI search would need to be performed to identify any habitats or species of concern that may have been impacted by the release or remedial action.
Historic Preservation Act of Nov. 22, 1978, P.L. 1160, as amended	71 P.S. § 1047.1 <i>et seq.</i>	Provides authority over historic preservation to the PA Historic and Museum Commission.		X		Applicable	If a historically significant site is identified, these provisions would apply.
PA History Code, P.L. 414, No. 72	37 Pa.C.S. § 101 <i>et seq.</i>						
The Water Well Drillers License Act (610), Act of May 29, 1956, P.L. 1840	32 P.S. § 645.1 <i>et seq.</i>	Sets forth requirements for the licensing of water well drillers, prevention of pollution of underground waters, submittal of well construction records and well abandonment notification.			X	Relevant & Appropriate	Wells drilled or decommissioned during remedial action will need to meet these requirements. Well Drillers will need to be licensed.
Drilling Water Wells, Chapter 47	17 Pa. Code §§ 47.1-47.8						
Chester County Health Department: Water, Wells, Nuisances, Sewage and Liquid Waste	Chapter 500	Sets forth requirements for the installation and/or decommissioning of wells.			X	Applicable	Wells drilled or decommissioned during remedial action will need to meet these requirements. Well Drillers will need to be licensed.
Environmental Accreditation Act 90 of 2002	27 Pa. C.S. §§ 4101-4113	Establishes PA’s Laboratory accreditation program.	X			Applicable	Facilities that test or analyze environmental samples will need to be accredited.
Environmental Laboratory Accreditation	25 Pa. Code Chapter 252						

Appendix C: Summary of Alternative Costs

Alternative Name	Description	Costs
OU1		
Alternative 1 - No Action	No cost	\$ -
Alternative 2 - Engineering Controls, Coupled with ICs	Design/Preconstruction	\$ 16,900
	Construction	\$ 114,910
	OM&M	\$ 664,440
	Total	\$ 796,250
Alternative 3 - Excavation with Offsite Treatment and/or Disposal	Design/Preconstruction	\$ 83,200
	Construction	\$ 7,218,040
	OM&M	\$ -
	Total	\$ 7,301,240
Alternative 4 - Excavation with Onsite Treatment	Design/Preconstruction	\$ 143,000
	Construction	\$ 5,900,010
	OM&M	\$ -
	Total	\$ 6,043,010
Alternative 5 - ISCO/ISCR Coupled with Soil Mixing	Design/Preconstruction	\$ 124,800
	Construction	\$ 2,692,900
	OM&M	\$ -
	Total	\$ 2,817,700
OU2		
Alternative 1 – No Action	No cost	\$ -
Alternative 2 – MNA	Design/Preconstruction	\$ 215,000
	Construction	\$ 358,530
	OM&M	\$ 2,427,790
	Total	\$ 3,001,320
Alternative 3 – In Situ Injection (ISCO/ISCR/Bioremediation)	Design/Preconstruction	\$ 415,000
	Construction	\$ 2,343,310
	OM&M	\$ 2,452,420
	Total	\$ 5,210,730
Alternative 4 – ISTT	Design/Preconstruction	\$ 324,200
	Construction	\$ 14,278,510
	OM&M	\$ 2,279,480
	Total	\$ 16,882,190
Alternative 5 – HC	Design/Preconstruction	\$ 615,000
	Construction	\$ 8,735,540
	OM&M	\$ 29,116,910
	Total	\$ 38,467,450

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Alternative Name	Description	Costs
OU3		
Alternative 1 - No Action	No cost	\$ -
Alternative 2 - Continued Operation, Maintenance, and Monitoring of Whole House Carbon Filtration Systems, Combined with Restrictions on the Use of Groundwater	Design/Preconstruction	\$ 3,000
	Construction	\$ -
	OM&M	\$ 34,420
	Total	\$ 37,420
Alternative 3 - Connection to the Existing Public Water Supply Waterline, Combined with Restrictions on the Use of Groundwater	Design/Preconstruction	\$ 5,000
	Construction	\$ 19,000
	OM&M	\$ -
	Total	\$ 24,000

Appendix D: Proposed Remedy Cost Summary

Alternative	Total
OU 1: ALTERNATIVE 5 ISCO/ISCR, Coupled with Soil Mixing	\$ 2,817,700
OU 2: ALTERNATIVE 3 In Situ Injection (ISCO/ISCR/Bioremediation)	\$ 5,210,730
OU 3: ALTERNATIVE 3 Connection to the Existing Public Water Supply Waterline, Combined with Restrictions on the Use of Groundwater	\$ 24,000
<u>Grand Total Combined Remedy</u>	\$ 8,052,430

APPENDIX D

TRUST AGREEMENT

BISHOP TUBE SITE
QUALIFIED SETTLEMENT FUND AGREEMENT

Constitution Drive Partners, L.P. (“Settlor Work Party” or “CDP”), and Johnson Matthey Inc. (“JMI”), Whittaker Corporation (“Whittaker”), and Marcegaglia USA, Inc. (“Marcegaglia”) (collectively CDP, JMI, Whittaker, and Marcegaglia shall be referred to as the “Settlors”), Commonwealth of Pennsylvania, Department of Environmental Protection (the “Department”), and *de maximis, inc.* (“Trustee”), hereby agree this 6th day of March, 2026, to establish a qualified settlement trust fund (the “QSF” or “Trust”) on the terms and conditions set forth herein.

RECITALS:

WHEREAS, the parties executing this Trust agreement (the “Agreement”) are the Trustee and the Settlors who have executed the Consent Decree entered on March 6, 2026 (the “Consent Decree”) in the matter of *Commonwealth of Pennsylvania v. Whittaker Corp., et al.*, U.S.D.C., E.D. Pa., Civil Action No. 08-6010 (“the Litigation”), which establishes payment mechanisms to support the implementation and funding of the Remedial Action, as that term is defined at Paragraph BB of the Consent Decree, selected by the “Department, pursuant to the Comprehensive Environmental Response Compensation & Liability Act, 42 U.S. C. § 9601 *et seq.* (“CERCLA”) and the Pennsylvania Hazardous Sites Cleanup Act, 35 P.S. § 6020.101, *et seq.* (“HSCA”) to address the release or threatened release of hazardous substances at and from the Bishop Tube HSCA Site located in East Whiteland Township, Chester County, Pennsylvania, as that site is defined in the Consent Decree (the “Site”); and

WHEREAS, the Settlors and the Department entered into the Consent Decree to fully and finally resolve the Litigation and any and all claims by and between the Department and the Settlors that were or could have been filed or otherwise asserted in the Litigation, including, but

not limited to, all potential financial liability that could arise from the claims set forth in the Litigation, all in accordance with the terms of the Consent Decree; and

WHEREAS, the obligations of the Settlers are more fully set forth in the Consent Decree; and

WHEREAS, this Trust is being established pursuant to, and is subject to, Paragraphs 6, 82-86 of the Consent Decree; and

WHEREAS, the United States District Court for the Eastern District of Pennsylvania (the “Court”) retains jurisdiction over the implementation and enforcement of the Consent Decree and this Agreement; and

WHEREAS, to better and more efficiently effect a resolution of the Litigation, as well as to fully and finally resolve their individual liability for past and future response costs related to the Site under the Consent Decree and all other applicable law, including but not limited to HSCA and CERCLA, the Settlers wish to establish the Bishop Tube HSCA Site QSF Trust (the “Trust”) as a qualified settlement fund within the meaning of Section 468B of the Internal Revenue Code of 1986, as amended (the “Code”) and the Treasury Regulations thereunder; and

WHEREAS, the Settlers anticipate that the Trust will qualify as a QSF either (a) at such time as all the requirements of Treasury Regulation Section 1.468B-1(c) are met, or (b) under Treasury Regulation Section 1.468B-1(j)(2). The Settlers anticipate that all the requirements of Treasury Regulation 1.468B-1(c) will be satisfied because (a) the Trust will be approved by the Court and subject to its continuing jurisdiction, (b) the Trust will fully and finally resolve all payment obligations arising from the assertion of CERCLA and HSCA claims against each Settlor with regard to the release or threatened release of hazardous substances and other alleged pollutants from the Site, subject to all terms set forth in the Consent Decree, (c) following

transfers to the Trust, the Settlers expect to have no remaining liability under CERCLA or HSCA to the Department or any third parties or any other governmental authorities, for Matters Addressed in the Consent Decree, subject to all terms set forth therein, and (d) the Trust is a trust under state law.

NOW, THEREFORE, as more fully described herein below, the Settlers intend the Trust, as a QSF, to hold, manage, invest, reinvest, and distribute the funds contributed by all Settlers under Paragraph 82 of the Consent Decree, as well as such other funds as may be contributed to the Trust pursuant to Paragraphs 82 and 100 of the Consent Decree (relating to funds that may be recovered by the Department or any of the Settlers from Defendant Christiana Metals Corporation (“Christiana Metals”) and/or its insurers) and Paragraph 90 (relating to grant funds that may be obtained and contributed by CDP) to fulfill the obligations of the Settlers under the Consent Decree to provide funding to support the performance of the Remedial Action for the Site in accordance with the provisions of said Consent Decree and this Agreement.

1. **Additional Definitions.**

To the extent that capitalized terms used in this Agreement are defined in the Consent Decree, those definitions shall apply to the capitalized terms as used herein. To the extent that there is any conflict or discrepancy between the definition of a capitalized term set forth in the Consent Decree and any definition of the same term set forth herein, the definition set forth in the Consent Decree shall control.

1.1 The term “Trustee” shall mean *de maximis, inc.* and its successors, and also any successor or successors to such Trustee appointed in the future, but in no event shall any such

Trustee or successor Trustee be a “related person” as defined in Treasury Regulation Section 1.468B-1(d) (2).

1.2 The term “CDP’s Project Coordinator” shall be the person identified and provided to the Department, pursuant to Paragraph 75 of the Consent Decree.

1.3 The term “Contractors” shall mean a qualified person or entity (i) retained and overseen by the Department or (ii) recommended by CDP and engaged by the Trustee, after consultation with CDP, pursuant to the provisions of this Trust for the purpose of performing and overseeing the implementation of the Remedial Action or any component of it.

2. **Establishment of the Trust.**

The Trustee, upon final approval and entry of the Consent Decree, shall promptly establish a segregated trust account which shall be known as the “Bishop Tube HSCA Site QSF Trust.”

3. **Name and Purpose of the Trust.**

The purpose of the Trust is to obtain, hold, invest and disburse funds (and income earned thereon), contributed to the Trust by the Settlers, other defendants or their insurers, or otherwise contributed to the Trust, including, but not limited to, pursuant to Paragraph 4 below, as necessary to satisfy the obligations of the Settlers pursuant to the Consent Decree.

In addition, to satisfy the obligations of CDP, the Trustee: (a) with the approval of CDP, shall hire CDP’s Project Coordinator; (b) as set forth in Paragraph 13.2 herein, shall hire and supervise such contractors (including consultants and subcontractors) as may be necessary or appropriate to comply with the Consent Decree and fulfill CDP’s obligations with respect to the Site, and (c) in consultation with CDP and CDP’s Project Coordinator, shall take all actions

within its powers and as necessary to ensure timely compliance with the Consent Decree and other obligations of CDP in regard to Remedial Action for the Site.

4. **Contributions to the Trust.**

4.1 **Payments by Settlers.** As set forth in Paragraph 86 of the Consent Decree, the Settlers have agreed to make contributions in establishment of the QSF in the total sum of Eight Million, Nine Hundred Eighty-Five Thousand Dollars (\$8,985,000) as follows:

(a) JMI and Whittaker jointly shall pay Seven Million, Three Hundred Thirty-Five Thousand Dollars (\$7,335,000), less the necessary and appropriate cost of implementing the Remedial Action for OU-3 of the Site that the Department has reimbursed or approved for reimbursement to JMI and Whittaker, which is equal to One Hundred and Six Thousand Six Hundred and Fifty-One Dollars and Forty-Nine Cents (\$106,651.49), as set forth in Paragraphs HH and 83 of the Consent Decree;

(b) CDP shall pay One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000); and

(c) Marcegaglia shall pay Four Hundred Thousand Dollars (\$400,000).

In addition, in Paragraph 86(d)-86(h), the Settlers have agreed to establish a Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern with financial assurances that may be drawn upon and used for Remedial Action or withdrawn in the manner and under the conditions set forth in Paragraph 86. Certain Settlers, excluding CDP, shall place any financial assurances in this Fund to Address Any Previously Unknown Area of Identified Contaminants of Concern in the Trust, as set forth in Paragraphs 86 and 87.

Additionally, pursuant to Paragraph 100 of the Consent Decree, the Department has agreed to use reasonable efforts to pursue its claims against Christiana Metals and any of its

available assets, including, but not limited to, insurance proceeds from Christiana Metals' insurers and, upon liquidating any assets recovered, the Department shall deposit the recovered funds into the Trust, net of proceeds dedicated for the recovery efforts. Additionally, should any Settlor or its insurers recover such available assets from Christiana Metals, that settlor shall deposit such recovered funds, net of proceeds dedicated for the recovery efforts, into the Trust after liquidating those recovered assets.

Additionally, as set forth in Paragraph 90 of the Consent Decree, CDP shall endeavor to obtain Industrial Sites Reuse Program ("ISRP") grants and, if obtained and allowed by the terms of those grants and/or applicable law, shall deposit all such grant proceeds into the Trust.

In the alternative, the Department and/or CDP may, to the extent permitted by applicable law, direct the above-referenced third parties to deposit proceeds into the Trust directly. Any additional contributions from such third parties, regardless of the means of their deposit, shall become part of the corpus of the Trust and may be used for all authorized QSF purposes.

4.2 Nature of Contributions by Settlers. All contributions to the QSF shall be made at the time and in the manner specified in Paragraphs 86 and 87 of the Consent Decree in immediately available funds, unless otherwise specified and allowed by the Consent Decree. All such contributions, together with the earnings thereon, shall be held in this QSF, in trust, for the payment of the costs and expenses incurred by the Trustee or the Department, as herein provided, and in accordance with the terms of the Consent Decree. Contributions made to the QSF shall not be construed as fines, penalties, or monetary sanctions.

4.3 **Non-transferability of Interest.** The interest of each Settlor herein and its respective obligation to provide funds as directed in the Consent Decree, is not transferable, except to the extent and in the manner such Settlor's underlying liability is transferable under the Consent Decree or other applicable law.

4.4 **Trustee's Responsibilities and Limitations.** The Trustee shall have no authority or responsibility hereunder to collect any contributions to the Trust from any Settlor and shall have no legal liability with respect to the Settlor's compliance with the terms of the Consent Decree other than as set forth in this Agreement. The Trustee shall promptly deposit into the Trust all payments received pursuant to Paragraph 4.1, above. The Trustee shall maintain a record of the name and address of each Settlor or other entity making a payment, on whose behalf a payment is made, together with the amount, form and date of payment.

5. **Express Beneficiary.**

Pursuant to Paragraph 83 of the Consent Decree, the Department shall be the principal beneficiary of the Trust.

6. **Principal, Interest and Expenses of Trust.**

6.1 All monies deposited in the Trust or earned by the investment or reinvestment of such monies ("Trust Funds") shall remain in the Trust and may not be withdrawn by any person, except to make payments as set forth in Paragraphs 6, 8 and 11, hereof.

6.2 Trust Funds shall be utilized only to (a) make all payments required by Paragraphs 6, 8 and 11 of this Agreement; (b) make all refunds required by Paragraph 8 of this Agreement; (c) pay the Trustee's fees and expenses in accordance with the fee schedule, attached hereto, as Appendix A, and the tax return preparation expenses and tax filing fees of the Trust; (d) pay any taxes incurred by the Trust; and (e) make payment(s) to the Department pursuant to

Paragraphs 85 and 86 of the Consent Decree, relating to the drawing down of Trust Funds by the Department under certain circumstances as set forth therein. The Trustee's costs of administration shall be paid quarterly following review and approval by the Department and CDP or its designees, which approval shall not be unreasonably withheld or delayed. Tax filings and tax payments, if any are necessary, shall be prepared and paid by the Trustee in a timely manner.

7. **Investment of Trust Funds.**

7.1 Subject to the guidelines set forth below regarding "Permitted Investments," the Trustee shall invest and reinvest the principal and income of the Trust and keep the Trust Funds invested in one or more accounts which shall be treated as a single fund without distinction between principal and income. The primary goal of these guidelines is to assure the security and return of principal with earnings and interest on principal as a secondary objective. The Trustee may engage the services of an investment adviser or manager, may rely on the advice of such adviser or manager, and may delegate investment decision-making authority to such adviser or manager with respect to management of the Trust Funds. The Trustee shall not be personally liable for any action or inaction taken in good faith reliance on the advice of such adviser or manager, nor for delegation in good faith of investment decision-making authority to such adviser or manager, unless attributable to the Trustee's gross negligence or willful misconduct. Notwithstanding the foregoing, the Trustee shall invest and reinvest the principal and income of the Trust in only one or more of the following, which shall constitute "Permitted Investments":

- a. U.S. Government Treasury or Agency obligations, including Treasury bills, notes, bonds rated AA or Aa or better;
- b. Eurodollar certificates of deposit, corporate notes, bonds commercial paper, time deposits or bank liabilities rated A+ or A1 or better;

- c. Money Market funds with assets of at least \$500 million with the highest possible rating;
- d. Bank “sweep” funds comprised of at least 90% of the above investment; and
- e. Accounts fully insured by the FDIC.

Maturity of individual securities shall not exceed 5 years from the time of purchase. Maturity of funds or pooled investment vehicles, whether measured by duration or average maturity, shall not exceed 5 years. All investments shall be made so as to at all times provide the Trust with sufficient liquidity to meet the anticipated cash needs of the Trust.

In investing, reinvesting, exchanging, selling and managing the QSF the Trustee shall discharge its duties with respect to the Trust solely in the interest of the accomplishment of the purposes and objectives of this Agreement, while seeking a reasonable (in such investment advisor’s professional opinion) market-based return on investment designed to fund the long-term implementation of the Remedial Action.

At no time shall any portion of the Trust Funds be invested in any Permitted Investments issued by any Settlor or any affiliate of any such Settlor unless such Permitted Investment is part of the holdings of a mutual fund or other investment vehicle which is managed by a professional manager not controlled by the Trustee or any of the Settlers.

8. **Disbursements from the Trust.**

During the term of this Trust, the Trustee shall make payments and pay invoices only to the extent payment is consistent with the Consent Decree and this Agreement, and only after receipt by the Trustee of written approval from the Department and CDP, pursuant to the terms of the Consent Decree and in accordance with HSCA. Such written approvals shall be given to the Trustee, the Department, and CDP or their designees. Invoices paid by the Trustee may include, but are not limited to, invoices from CDP’s Project Coordinator and from consultants, contractors, vendors, legal counsel and/or financial advisors to the Trustee, and others, provided

in each case that the invoiced services are permissible under the Consent Decree, and approved for reimbursement in accordance with this Paragraph. The Trustee may pay matching funds that may be required by Pennsylvania Department of Community and Economic Development to release any ISRP grant monies, as discussed above in Paragraph 4.1 of the Agreement and in Paragraph 90 of the Consent Decree. The Trustee may also pay invoices for attorneys' fees and legal costs incurred by CDP to obtain the necessary access agreements or easement(s) or to address access disputes, as permissible under the Consent Decree, and approved for reimbursement in writing by the Department, up to a maximum of \$5,000 per year. The Trustee shall make all approved payments in a timely fashion so as to avoid late charges and penalties.

CDP or its designees shall forward copies of all directions for payment of approved invoices to the Department at the same time and in the same manner they are forwarded to the Trustee. The Department or its designees shall forward copies of all directions for payment of approved invoices to CDP at the same time and in the same manner they are forwarded to the Trustee. The Trustee shall be entitled to rely upon CDP's or its designee(s)' directions and the Department's or its designee(s)' direction for the payment of invoices as conclusively establishing that the items covered thereby fall within the categories of costs authorized for payment under the terms of the Consent Decree and this Agreement and approved for reimbursement as required by this Paragraph. The Department's or its designee(s)' directions for payment of invoices do not need approval by CDP.

9. **No Authority to Conduct Business.**

The purpose of the Trust is limited to the matters expressly set forth in this Agreement, and this Agreement shall not be construed to confer upon the Trustee any authority to carry on any business or activity for profit or to divide the gains therefrom among the Settlers.

10. **Termination of the Trust.**

This Trust shall terminate upon the earlier of (a) the Department's certification that the Remedial Action that is the subject of the Consent Decree, and all of CDP's obligations thereunder, have been satisfied pursuant to Paragraph 49 of the Consent Decree and any remaining funds have been utilized to reimburse the Department's response costs in accordance with the terms of the Consent Decree pursuant to Paragraph 89 of the Consent Decree; (b) issuance of a Statement of No Further Action as set forth in Paragraph 53 of the Consent Decree and any remaining funds after payment of outstanding invoices would be paid to the Department; (c) termination of the Trust by the Department for cause pursuant to Paragraph 85 of the Consent Decree; or (d) expenditure of all funds deposited in the Trust, pursuant to Paragraphs 84 of the Consent Decree.

11. **Distribution of Trust Funds Upon Termination.**

Upon termination of this Trust pursuant to Paragraphs 10 above, or an appropriate order of the Court, the Trustee shall liquidate the assets of the QSF and distribute any remaining Trust property, including all accrued, accumulated, and undistributed income, in accordance with the terms of the Consent Decree to the Department, or as otherwise ordered by the Court.

Upon termination of this Trust pursuant to Paragraph 10(d) above, due to the expenditure of all Trust Funds before completion of the Remedial Action, the Trustee shall wind up the affairs of the Trust and dissolve it.

12. **Alterations, Modifications and Amendments.**

This Trust may be altered, modified, or amended from time to time to ensure continued compliance with the terms of the Consent Decree by an instrument in writing executed by the Trustee, the Department, and CDP and, if the amendment is material, approval of the Court;

provided, however, that no such alteration or amendment may conflict with or modify in any respect the obligations of CDP under the Consent Decree, and provided further (a) that any alteration or amendment of the Consent Decree shall be subject to approval by the Department, if appropriate, pursuant to the terms of the Consent Decree, and (b) that Paragraph 21, hereof, shall not be revoked and shall not be altered or amended to limit the effect thereof with respect to acts or omissions taken or made up to thirty (30) days after such alteration or amendment. No alterations or amendments may be made to the terms of this Trust if such alterations or amendments would cause this Trust to fail to qualify as a QSF under Section 1.468B-1 of the Treasury Regulations.

13. **Express Powers of Trustee.**

Without in any way limiting the power and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered as hereinafter set forth:

13.1 **Payment of Expenses of Administration.** To incur and pay any and all charges, taxes, and expenses upon or connected with the QSF in the discharge of its fiduciary obligations under this Trust. All such payments shall be made using the assets of the QSF.

13.2 **Retention of Contractors.** With the written prior approval of CDP and the Department (or in the case of contractors to be retained for and overseen by the Department, approval only of the Department), pursuant to Paragraph 3 of the Agreement, to engage the services of (and pay compensation to) one or more Contractors as needed to satisfy the requirements of the Consent Decree or this Agreement. CDP, in conjunction with CDP's Project Coordinator, shall determine the applicable types, forms and amounts of insurance that each

Contractor shall be required to have in force, except for any Contractor retained by the Department.

13.3 **Preservation of Principal.** Notwithstanding any other provision in this Agreement, to at all times hold, manage, invest, and reinvest the assets of the QSF in a manner designed to preserve the accrued income and principal thereof for the purposes of satisfying the requirements of the Consent Decree or this Agreement. All investments, including, but not limited, to securities, shall be such that moneys will be available upon demand for payment of work required for the Remedial Action pursuant to all work schedules and requests for reimbursement.

13.4 **Retention of Investment Advisor and Consultants.** With the prior approval of CDP and the Department, to engage the services of (and pay compensation to) investment advisors, accountants, agents, managers, or counsel with respect to the management of investments of the QSF, the management of the QSF and Trust and the preparation and filing of tax returns as needed to satisfy the requirements of the Consent Decree, applicable law, or this Agreement.

13.5 **Execution of Documents of Transfer.** To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to satisfy the requirements of the Consent Decree, applicable law, or this Agreement.

13.6 **Negotiations of Claims.** Upon obtaining approval of CDP and the Department, to compromise or otherwise adjust all claims in favor of or against the Trust.

13.7 **Litigation.** With approval of CDP and the Department to institute and defend litigation, in the name of the Trust. The Trustee and its counsel shall have discretion as to the

conduct and defense of the litigation unless otherwise agreed in writing by the Department and CDP, except that any settlement involving payment of funds from the Trust funds shall require written approval of the Department and CDP.

13.8 **Execution of Contracts and Agreements.** (a) At the direction of CDP, and upon written confirmation from CDP's Project Coordinator that the contracts or agreements are consistent with the work plans (as "work plans" and "WP" are defined and utilized in the Consent Decree), to make, execute, acknowledge, and deliver any and all contracts or agreements on behalf of the Trust; and (b) at the direction of the Department, to make, execute, acknowledge, and deliver any all contracts or agreements on behalf of the Trust in connection with contractors being retained on behalf of the Department.

13.9 **Discretion in Exercise of Powers.** To do any other acts which it deems proper to satisfy the requirements of the Consent Decree or of this Agreement.

14. **Independent Accounts.**

Any bank, investment, escrow, or other accounts established by the Trustee to hold or manage monies and other assets of the QSF shall be in accounts established solely to hold the monies and other assets of the Trust and shall be kept separate from any other accounts, including but not limited to any accounts holding monies or assets of any Settlor.

15. **Advice of Counsel.**

With the written consent of both CDP and the Department, the Trustee may, as needed, engage the services of (and pay compensation to) legal counsel, with respect to any question arising as to compliance with this Agreement or to support the Trust. The Trustee shall be fully protected, to the extent permitted by law, in acting in reliance upon the advice of counsel.

16. **Trustee Compensation.**

The Trustee acting hereunder, including any interim Trustee, shall be compensated in accordance with a compensation schedule acceptable to CDP and the Department, which shall be in writing and attached hereto as Appendix A upon its approval. Any change in the Trustee's compensation shall become effective only upon written approval, of CDP and the Department.

17. **Appointment of Successor Trustee.**

17.1 The Trustee may resign at any time by delivering his/her resignation, in writing to CDP and the Department, such resignation to take effect upon the appointment of a successor Trustee.

17.2 CDP and/or the Department may remove the Trustee at any time, by delivering a joint or separate notice of such removal in writing, such removal to take effect ten (10) days after the Trustee's receipt of the last notice, or on such later date that may be specified in the notice. However, neither the Department nor CDP shall issue such notice until the Department and CDP have jointly selected a successor Trustee, pursuant to Paragraphs 17.3 or 17.4, below, and that successor Trustee is ready, willing, and able to assume the Trustee's responsibilities within the notice period specified in the foregoing sentence.

17.3 Any vacancy in the office of the Trustee created by bankruptcy, insolvency, death, disability, resignation, removal, or succession, as provided herein, shall be filled jointly by an appointment in writing by CDP and the Department of a successor Trustee.

17.4 Any successor Trustee shall be appointed in writing by CDP and the Department jointly.

17.5 A successor trustee shall have all of the rights, powers, duties, authority and privileges as if initially named as a Trustee hereunder.

17.6 A copy of each instrument of resignation, removal, appointment, and acceptance of appointment shall be attached to an executed counterpart of this Agreement in the custody of CDP and the Department.

18. **Acceptance of Appointment by Successor Trustees.**

Acceptance of appointment as a successor Trustee shall be in writing, delivered certified mail to CDP and the Department, and shall become effective upon receipt by CDP and the Department of notice of such acceptance. Upon the acceptance of appointment of any successor Trustee, title to the Trust shall thereupon be vested in said successor Trustee without the necessity of any conveyance or instrument. Each successor Trustee shall have all the rights, powers, duties, authority, and privileges as if initially named as a Trustee hereunder.

19. **Preservation of Record of Changes to Trustees.**

A copy of each instrument of resignation, removal, appointment, and acceptance of appointment shall be attached to an executed counterpart of this Agreement in the custody of CDP and the Department.

20. **Instructions to the Trustee.**

Notwithstanding anything herein to the contrary, the Trustee is hereby directed to do the following in addition to other duties set forth in other provisions of this Agreement:

20.1 **Quarterly Reports.** Have prepared quarterly financial reports during the term of the Trust, describing the manner in which all of the assets of the QSF are then invested and the current market value of such assets, as well as the obligations, income, expenses, and disbursements of the QSF. Copies of quarterly reports shall be transmitted by the Trustee to CDP and the Department within fifteen (15) days of the end of the calendar quarter, with an

annual reconciliation of the previous calendar year's quarterly reports issued to CDP and the Department on or before March 1 of the ensuing calendar year.

20.2 **Annual Statements.** Have prepared annual financial statements during the term of the Trust, describing the manner in which all of the assets of the QSF then invested and the current market value of such assets, as well as the obligations, income, expenses, and disbursements of the Trust from the QSF. All financial statements shall be prepared on an accrual basis and shall be in accordance with Generally Accepted Accounting Principles, applied on a consistent basis. Copies of such statements shall be transmitted by the Trustee in writing to CDP and the Department.

20.3 **Counsel.** Advise, consult, and confer with and otherwise inform CDP and the Department, upon any request by CDP and/or the Department, with respect to matters arising out of this Agreement, administration of the QSF, or any other matter which the Trustee, in its discretion, deems appropriate to bring to the attention of CDP and/or the Department. Upon request by any Settlor, the Trustee shall perform such further acts to execute and deliver other documents as may be reasonably necessary for such Settlor or the Department to satisfy inquiries from its tax advisors, accountants, independent financial auditors, the Internal Revenue Service or any other governmental authority, including as contemplated by Treasury Regulations Sections 1.162-21 and 1.468B-1, and any subsequently proposed or finalized relevant regulations or administrative guidance. The Trustee shall cooperate in good faith with the Settlor or the Department in regard to any tax claim, dispute, investigation, audit, examination, contest, litigation or other proceeding relating to this Agreement.

20.4 **Records.** Maintain records of all actions taken by the Trustee with respect to matters arising out of this Agreement or administration of the Trust. Copies of said records shall

be provided to CDP and/or the Department upon request, and upon termination of this Trust said records shall be transmitted, together with all other records of the Trustee, to CDP and the Department. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any of CDP has occurred.

21. **Concerning the Trustee**

21.1 **Indemnity.** Each Trustee, whether initially named or appointed as a successor Trustee, shall act as a Trustee only and not personally; and in respect of any contract, obligation or liability made or incurred by the Trustee in good faith, all persons shall look solely to the assets of the Trust and not the Trustee personally or to any of the Settlers or the Department. Neither the Trustee, the Settlers, nor the Department shall incur any liability, personal or corporate, of any nature in connection with any act or omission, made in good faith, of the Trustee in the administration of the QSF or otherwise pursuant to this Agreement. The Trustee shall be indemnified and held harmless by the Trust. This indemnification and hold harmless provision shall cover all expenses reasonably incurred by the Trustee in defense of the aforementioned acts or omissions of the Trustee. Except for the payment of all expenses reasonably incurred, this indemnification shall not apply to any liability arising from a criminal proceeding where the Trustee had reasonable cause to believe that the conduct in question was unlawful, arising from any civil proceeding imposing liability upon the Trustee for willful misconduct, or arising from any action by the Trustee that was not taken in good faith. The Trustee (a) shall not be responsible for determining or compelling compliance by the Settlers or the Department with the Consent Decree; (b) shall be obligated only for the performance of such duties as are expressly and specifically set forth in this Agreement on its part to be performed,

and no implied duties or obligations of any kind shall be read into this Agreement against or on the part of the Trustee; and (c) may consult counsel satisfactory to it, including in-house counsel, and the opinion or advice of such counsel in any instance shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with the opinion or advice of such counsel.

21.2 **Survival.** This section shall survive depletion of the QSF and termination of the Trust.

21.3 **Insurance.** At all times while serving as the Trustee, the Trustee shall obtain and keep in place insurance of the type and amount and forms customarily maintained by Trustee and as are commercially reasonable in view of the nature of the Trustee's duties and obligations under this Trust Agreement, including but not limited to commercial general liability policies and such other policies as CDP and the Department may deem necessary or prudent. The premiums for such policies shall be considered an ordinary cost of the Trustee doing business and shall not be chargeable to or paid by the Trust funds.

22. **Interests Not Assignable or Subject to Claims of Creditors.**

The corpus of the QSF, including all interest and earnings thereon, shall be the sole and exclusive property of the Trust and shall not be subject to assignment, attachment, recoupment, garnishment, anticipation, alienation or seizure by any creditor of any Settlor; any interest reserved the Department, as provided in Paragraph 11, above, shall not be available until termination of the Trust as provided herein. The interest of each beneficiary in the income or principal of the Trust hereunder shall be free from the control or interference of any creditor and shall not be subject to assignment, attachment, anticipation, or alienation.

23. **Disputes.**

In the event a dispute of any kind arises in connection with this Agreement (including any dispute concerning indemnification of the Trustee), the Trustee may, in his/her sole discretion, elect to commence an interpleader action and pay all or any portion of the Trust Funds into the Court and provide a complete accounting of all monies paid into the Trust or paid out of the Trust by the Trustee. In the event of such payment, it is understood that Trustee will have no further obligation to Settlers or the Department with respect to the amount so paid.

24. **Tax Treatment.**

It is intended that this Trust be a QSF under Internal Revenue Code Section 468B and Reg. 1.468(B) and taxable as such, and not as a partnership, corporation, or Settlor trust, that is, a trust whose property is deemed to be owned by one or more Settlers or other persons pursuant to one or more of Internal Revenue Code Sections 671 through 678. The Trustee (or a tax administrator engaged by the Trustee at the expense of the Trust) shall file tax returns for the Trust on the assumption that it is a QSF, unless and until it is determined, or the Trustee otherwise has reason to believe, that the Trust is not a QSF. In the event this Trust is determined, or is in the sole judgment of the Trustee at risk of being determined, to be other than a trust which is taxable as a QSF and it is prudent to reorganize the Trust so that it shall be such a QSF, then the Trustee is authorized to execute such amendments to this Agreement, restatements of this Agreement or a new trust agreement, instruments of assignment, plans of reorganization or other documents as are necessary to enable the Trust or a successor to the assets of the Trust to be a trust which is taxable as such a QSF; provided that in no event shall the effect of any such reorganization or other action be to change the purposes hereof, divert the assets of this Trust

otherwise than for its original purposes set forth herein, or enlarge the powers or responsibilities of the Trustee.

25. **Accounting.**

Within ninety (90) days after the effective date of the Consent Decree, the Trustee shall prepare a statement setting forth each payment received by the Trustee, the identity of the Settlor making such payment or on behalf of which the payment was made, the date such payment was received, the total amount of Trust Funds in the Trust, the amount of any interest and/or income earned on the Trust Funds, and the amount of any taxes, fees and expenses paid by the Trustee. The Trustee shall prepare an updated accounting in accordance with Paragraph 20, above, and shall send such accountings to CDP and the Department as provided in Paragraph 31 and Appendix B.

26. **Special Provisions Relating to the Department's Takeover of the Remedial Action.**

If, at any time during the term of this Agreement, the Department takes over the performance of any Remedial Action pursuant to Paragraph 70 of the Consent Decree ("Remedial Action Takeover"), and intends to direct payment of monies from the Trust Fund to pay for performance of the Remedial Action during the period of such Remedial Action Takeover, the Department shall notify the Trustee in writing, with copies of the writing simultaneously sent to CDP, of the Department's commencement of such Remedial Action Takeover. Upon receiving such written notice from the Department, the disbursement procedures set forth in Paragraph 8, hereof, shall immediately be suspended, and the Trustee shall thereafter make payments from the Trust Fund for the sole purpose of providing payment for performance of the Remedial Action required by the Consent Decree only to such person or persons as the Department may designate in writing to the Trustee, with a copy to CDP or CDP's

Designated Representative(s) for Receipt of Notice, set forth in Appendix B, in accordance with Paragraph 31, below. Further, after receiving such written notice from the Department, the Trustee shall not make any disbursements from the Trust Fund at the request of CDP, including their representatives and/or contractors, or of any other person except at the sole and express written direction of the Department. If the Department ceases such a Remedial Action Takeover in accordance with the terms of the Consent Decree, the Department shall so notify the Trustee in writing, with copies of the writing simultaneously sent to CDP and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Paragraph 8, hereof, shall be reinstated.

27. Consent to Jurisdiction and Services.

The Trustee absolutely and irrevocably consents and submits to the jurisdiction of United States District Court for the Eastern District of Pennsylvania in connection with any actions, proceedings or disputes arising out of or relating to this Agreement. In any such action, proceeding or dispute, the Trustee hereby absolutely and irrevocably waives personal service of any summons, complaint, declaration, or other process provided that the service thereof is made by certified mail directed to the Trustee at its address in accordance with Appendix B.

28. Reproduction of Documents.

This Agreement and all documents relating hereto, including, without limitation, (a) consents, waivers and modifications which may hereafter be executed, and (b) certificates and other information previously or hereafter furnished, may be reproduced by any means. Any such reproduction shall be admissible in evidence as the original itself in any judicial or administrative proceeding, whether or not the original is in existence and whether or not such reproduction was made by the Trustee in the regular course of business, and any enlargement, facsimile or further reproduction of such reproduction shall likewise be admissible in evidence.

29. **Choice of Law.**

This Agreement and the Trust shall be administered, construed, and enforced according to the laws of the Commonwealth of Pennsylvania, except to the extent that federal law applies to questions arising under CERCLA, the National Contingency Plan, 40 C.F.R. Part 300, promulgated thereunder applicable federal tax laws and regulations.

30. **Interpretation.**

As used in this Agreement, words in the singular include the plural and words in the plural include the singular and the masculine and neuter genders shall be deemed to include the masculine, feminine and neuter. The description heading for each Section and Subsection of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. It is agreed that neither the act of entering into this Agreement nor any contribution to the QSF nor any action taken under this Agreement shall be deemed to constitute an admission of any liability or fault on the part of the Trustee, any of the Settlers, or any of them, or the Department with respect to the Consent Decree, the Remedial Action, the Site or otherwise, nor does it constitute a commitment or agreement, either express or implied, by any or all of them to undertake any further activities outside the scope of this Agreement.

31. **Notice.**

All notices, approvals, written notices or written approvals required under this Agreement shall be directed to the applicable Party or Parties' Designated Representative(s) for Receipt of Notice set forth in Appendix B. Unless otherwise specified in this Agreement, any notices, approvals, written notices or written approvals required to be given to the Department, the Department's Project Coordinator, any Settlor, or CDP's Project Coordinator(s) under this Agreement shall be given by email addressed as set forth in Appendix B.

32. **Counterparts.**

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

WITNESS the execution hereof of the Trustee as of the date first above written.

[THE REMAINDER OF THIS PAGE WAS LEFT INTENTIONALLY BLANK
SIGNATURES CONTINUE ON NEXT PAGE]

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page(s) for the Commonwealth of Pennsylvania Department of Environmental Protection:

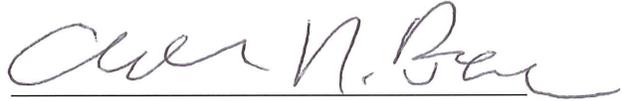
WITNESS the execution of this Agreement by the undersigned Company by its authorized representative.

Commonwealth of Pennsylvania Department of Environmental Protection



C. David Brown, P.G
Regional Manager
Environmental Cleanup and Brownfields

Date: 3/4/2026



Adam N. Bram
Regional Counsel

Date: 3/4/2026

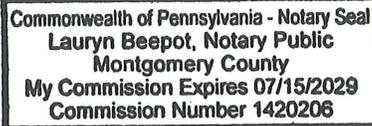
Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for the Commonwealth of Pennsylvania Department of Environmental Protection:

**COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY**

On this 4 day of March, 2020, before me, the undersigned officer, personally appeared C. David Brown, P.G. who acknowledged himself to be the Environmental Cleanup and Brownfields Program Manager of the Commonwealth of Pennsylvania, Department of Environmental Protection, Southeast Regional Office, whose name is subscribed to this Qualified Settlement Fund Trust Agreement, and acknowledged that he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

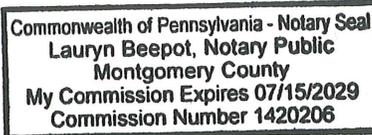


Lauryn Beepot 7/15/2029
Notary Public (with expiration date)

**COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY**

On this 4 day of March, 2020, before me, the undersigned officer, personally appeared Adam N. Bram who acknowledged himself to be the Regional Counsel of the Commonwealth of Pennsylvania, Department of Environmental Protection, Southeast Regional Office, whose name is subscribed to this Qualified Settlement Fund Trust Agreement, and acknowledged that he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.



Lauryn Beepot 7/15/2029
Notary Public (with expiration date)

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page(s) for Settlor Whittaker Corporation:

WITNESS the execution of this Agreement by the undersigned Company by its authorized representatives.

WHITTAKER CORPORATION:

MC

Richard L. Taylor
Vice President

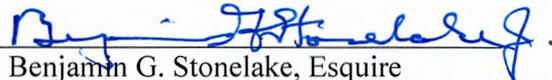
MARTHA CONNELL


Daniel J. Whitman
Vice President and Secretary

Stephanie R. Breitenbach *SRB*

Date: 2/26/2026

Date: 2/26/26


Benjamin G. Stonelake, Esquire
Attorney for Whittaker Corporation

Date: 3/6/26

Company Taxpayer Identification Number: 95-4033076

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for Settlor Whittaker Corporation:

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Cuyahoga) : Ohio

On this 26 day of February, 2026 before me, a Notary Public, the undersigned officer personally appeared, Richard L. Taylor, who acknowledged himself to be the Vice President of Whittaker Corporation, a corporation, and that he as such Vice President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as Vice President.

In witness whereof, I hereunto set my hand and official seal.



Morgan M. Springford
Notary Public, State of Ohio
My Commission Expires:

12/29/2026

Morgan M. Springford
Notary Public (with expiration date)

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Cuyahoga) : Ohio

On this 26 day of February, 2026 before me, a Notary Public, the undersigned officer personally appeared, Daniel J. Whitman, who acknowledged himself to be the Vice President and Secretary of Whittaker Corporation, a corporation, and that he as such Vice President and Secretary, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as Vice President and Secretary.

In witness whereof, I hereunto set my hand and official seal.



Morgan M. Springford
Notary Public, State of Ohio
My Commission Expires:

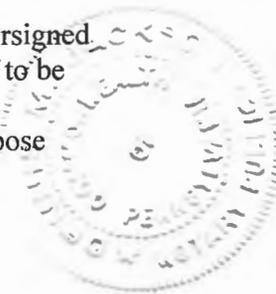
12/29/2026

Morgan M. Springford
Notary Public (with expiration date)

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Philadelphia) :

On this 6th day of March, 2026 before me, a Notary Public, the undersigned officer personally appeared, Benjamin G. StoneLake, Esquire, who acknowledged himself to be the attorney for Whittaker Corporation, a corporation, and that he as such attorney, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as attorney.

In witness whereof, I hereunto set my hand and official seal.



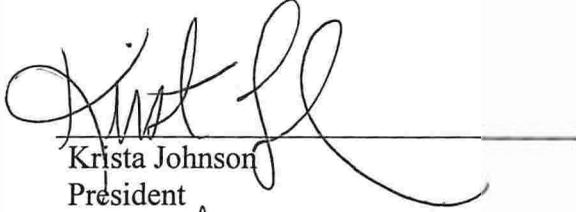
Dennis M. Jackson 3/6/26
Notary Public (with expiration date)

Commonwealth of Pennsylvania - Notary Seal
Dennis M Jackson, Notary Public
Philadelphia County
My Commission Expires June 8, 2029
Commission Number 1249249

Signature Page for Settlor Johnson Matthey Inc.:

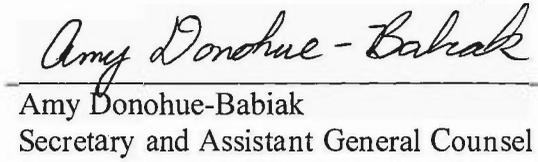
WITNESS the execution of this Agreement by the undersigned Company by its authorized representatives.

JOHNSON MATTHEY INC.:



Krista Johnson
President

Date: 9 Feb 2026



Amy Donohue-Babiak
Secretary and Assistant General Counsel

Date: 2-9-26

Company Taxpayer Identification Number: 23-0411710

JURAT Page(s) for Settlor Johnson Matthey Inc:

COMMONWEALTH OF PENNSYLVANIA:

COUNTY OF CHESTER:

On this 9th day of February 2026, before me, a Notary Public, the undersigned officer personally appeared, Krista Johnson, who acknowledged herself to be the President of Johnson Matthey Inc., a corporation, and that she as such President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by herself as President.

In witness whereof, I hereunto set my hand and official seal.

Commonwealth of Pennsylvania - Notary Seal
Brenda H. Pennington, Notary Public
Chester County
My commission expires June 21, 2029
Commission number 1305870
Member, Pennsylvania Association of Notaries

Brenda H. Pennington
Notary Public (with expiration date)

COMMONWEALTH OF PENNSYLVANIA:

COUNTY OF CHESTER:

On this 9th day of February 2026, before me, a Notary Public, the undersigned officer personally appeared, Amy Donohue-Babiak, who acknowledged herself to be the Secretary and Assistant General Counsel of Johnson Matthey Inc., a corporation, and that she as such Secretary and Assistant General Counsel, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by herself as Secretary and Assistant General Counsel.

In witness whereof, I hereunto set my hand and official seal.

Commonwealth of Pennsylvania - Notary Seal
Brenda H. Pennington, Notary Public
Chester County
My commission expires June 21, 2029
Commission number 1305870
Member, Pennsylvania Association of Notaries

Brenda H. Pennington
Notary Public (with expiration date)

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page for Settlor Marcegaglia USA, Inc.:

WITNESS the execution of this Agreement by the undersigned Company by its authorized representatives.

MARCEGAGLIA USA, INC.:

Andrea Marco Costi

Andrea Marco Costi
President

Date: 01/25/2026

Charles V. Keating

Charles V. Keating
Secretary

Date: 01/27/2026

Kevin K. Douglass

Kevin K. Douglass, Esquire
Attorney for Marcegaglia USA, Inc.

Date: 1/28/2026

Company Taxpayer Identification Number: 23-2671480

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for Settlor Marcegaglia USA, Inc.:

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Allegheny) :

On this 25th day of January, 2026, before me, a Notary Public, the undersigned officer personally appeared, Andrea Marco Costi, who acknowledged himself to be the President of Marcegaglia USA, Inc., a corporation, and that he as such President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as President.

Notarized online using audio-video communication

Commonwealth of Pennsylvania - Notary Seal
Casi Walter, Notary Public
Allegheny County
My commission expires Feb 25, 2027
Commission number 1343599

In witness whereof, I hereunto set my hand and official seal.

Casi Walter

Notary Public (with expiration date) 02/25/2027

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Allegheny) :

On this 27th day of January, 2026, before me, a Notary Public, the undersigned officer personally appeared, Charles V. Keating, who acknowledged himself to be the Secretary of Marcegaglia USA, Inc., a corporation, and that he as such Secretary, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as Secretary.

Notarized online using audio-video communication

Commonwealth of Pennsylvania - Notary Seal
Casi Walter, Notary Public
Allegheny County
My commission expires Feb 25, 2027
Commission number 1343599

In witness whereof, I hereunto set my hand and official seal.

Casi Walter

Notary Public (with expiration date) 02/25/2027

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (ALLEGHENY) :

On this 28th day of JANUARY, 2026, before me, a Notary Public, the undersigned officer personally appeared, Kevin K. Douglass, who acknowledged himself to be the attorney for Marcegaglia USA, Inc., a corporation, and that he as such attorney, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as attorney.

In witness whereof, I hereunto set my hand and official seal.

Sharon A Zeto

Notary Public (with expiration date)

Commonwealth of Pennsylvania - Notary Seal
Sharon A. Zeto, Notary Public
Allegheny County
My commission expires November 21, 2029
Commission number 1185181
Member, Pennsylvania Association of Notaries

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page for Settlor Constitution Drive Partners, L.P.:

WITNESS the execution of this Agreement by the undersigned Company by its authorized representative.

CONSTITUTION DRIVE PARTNERS, L.P.:



Brian O'Neill
President – Constitution Drive Partners,
Acquisition Corporation, General Partner for
Constitution Drive Partners L.P.

Jonathan Spergel, Esquire

Date: _____

Date: 2-27-26

Company Taxpayer Identification Number: 20-1921065

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for Settlor Constitution Drive Partners, L.P.:

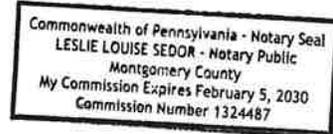
COMMONWEALTH OF PENNSYLVANIA :

COUNTY OF (Montgomery) :

On this 27th day of February, 2026 before me, a Notary Public, the undersigned officer personally appeared, Brian O'Neill, who acknowledged himself to be the President of Constitution Drive Partners, a corporation, and that he as such President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as President.

In witness whereof, I hereunto set my hand and official seal.

Leslie Louise Sedor 2.5.2030
Notary Public (with expiration date)



COMMONWEALTH OF PENNSYLVANIA :

COUNTY OF () :

On this _____ day of _____, 20__, before me, a Notary Public, the undersigned officer personally appeared, Jonathan Spergel, who acknowledged himself to be the attorney for Constitution Drive Partners, and that he as such attorney, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as attorney.

In witness whereof, I hereunto set my hand and official seal.

Notary Public (with expiration date)

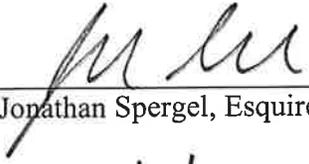
Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page for Settlor Constitution Drive Partners, L.P.:

WITNESS the execution of this Agreement by the undersigned Company by its authorized representative.

CONSTITUTION DRIVE PARTNERS, L.P.:

Brian O'Neill
President – Constitution Drive Partners,
Acquisition Corporation, General Partner for
Constitution Drive Partners L.P.



Jonathan Spergel, Esquire
Date: 3/3/26

Date: _____

Company Taxpayer Identification Number: 20-1921065

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for Settlor Constitution Drive Partners, L.P.:

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (_____) :

On this _____ day of _____, 20__, before me, a Notary Public, the undersigned officer personally appeared, Brian O'Neill, who acknowledged himself to be the President of Constitution Drive Partners, a corporation, and that he as such President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as President.

In witness whereof, I hereunto set my hand and official seal.

Notary Public (with expiration date)

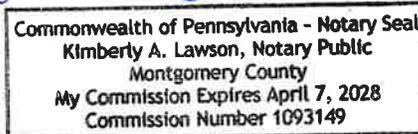
COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF (Montgomery) :

On this 3rd day of MARCH, 2026, before me, a Notary Public, the undersigned officer personally appeared, Jonathan Spergel, who acknowledged himself to be the attorney for Constitution Drive Partners, and that he as such attorney, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as attorney.

In witness whereof, I hereunto set my hand and official seal.



Notary Public (with expiration date)



Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

Signature Page for Trustee *de maximis, inc.*:

WITNESS the execution of this Agreement by the undersigned Company by its authorized representatives.

DE MAXIMIS, INC.:



Bennie Underwood
President

Date: 8 JAN 2026



Michael Miller
Secretary

Date: 1/9/26

Company Taxpayer Identification Number: 62-1342302

Bishop Tube Superfund Site Qualified Settlement Fund Trust Agreement

JURAT Page(s) for *de maximis, inc.*:

STATE OF TENNESSEE :

COUNTY OF (Knox) :

On this 8th day of January, 2026, before me, a Notary Public, the undersigned officer personally appeared, Bennie Underwood, who acknowledged himself to be the President of *de maximis, inc.*, a corporation, and that he as such President, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as President.

In witness whereof, I hereunto set my hand and official seal.



Lori R. Sillinger
Notary Public (with expiration date)

STATE OF TENNESSEE :

COUNTY OF (Knox) :

On this 9th day of January, 2026 before me, a Notary Public, the undersigned officer personally appeared, Michael Miller, who acknowledged himself to be the Secretary of *de maximis, inc.*, a corporation, and that he as such Secretary, being authorized to do so, executed the Qualified Settlement Fund Trust Agreement for the purpose therein contained by signing the name of the corporation by himself as Secretary.

In witness whereof, I hereunto set my hand and official seal.



Lori R. Sillinger
Notary Public (with expiration date)

APPENDIX A



2025 SCHEDULE OF ADMINISTRATOR FEES

FUND ADMINISTRATION

Fund Administrator/Trustee	\$ 255.00
Fund Officer	\$ 180.00
Accountant	\$ 140.00
Fund Accounts Payable Specialist	\$ 130.00
Account Support	\$ 95.00

**Rates are hourly*

PERSONNEL CHARGES

- Management and technical personnel time charges will be invoiced according to the Rate Schedule above.
- Personnel time charges for direct project support activities such as report typing and reproduction are invoiced according to the Rate Schedule above. Charges include indirect support staff, text processing, equipment, computer connect charges, and nominal communication charges.
- All time is rounded to the nearest one-quarter hour.

TRAVEL AND LIVING EXPENSES

- Travel and living expenses are charged at cost plus 3%.

OTHER CHARGES AND REIMBURSABLE EXPENSES

- All project-related purchases will be itemized and invoiced at cost plus 3%, including materials, telephone/teleconference charges, postage, photocopying, overnight mailings, fees, equipment purchased, and other costs incurred specifically for the project.

There is a flat fee of \$900/year for QSF tax preparation. Year-end reports for tax purposes showing items of income and expenses (ERT and Escrow) are billed at \$900 plus \$18.00 per participant. Fees are subject to change on an annual basis.

APPENDIX B

DESIGNATED REPRESENTATIVES FOR RECEIPT OF NOTICE

Department's Designated Representative for Receipt of Notice:

Dustin A. Armstrong
Environmental Protection Specialist
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401
(484) 250-5723
darmstrong@pa.gov

With copy to:

Adam N. Bram
Regional Counsel
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Office of Chief Counsel
2 East Main Street
Norristown, PA 19401
(484) 250-5868
abram@pa.gov

Trust's and Trustee's Designated Representative for Receipt of Notice:

Major Sharpe
Fund Administrator
de, maximis, inc.
450 Montbrook Lane
Knoxville, TN 37919
Telephone: 865-691-5052
Email Address: major@demaximis.com

Johnson Matthey Inc.'s Designated Representative for Receipt of Notice:

Amy Donohue-Babiak, Esquire
Assistant General Counsel
Johnson Matthey Inc.
1397 King Road
West Chester, PA 19380
Telephone: 610-971-3084
Email: Amy.Donohue-Babiak@jmus.com

Whittaker Corporation's Designated Representative for Receipt of Notice:

Tasha N. Miracle, Esquire
Assistant General Counsel - EHS
Parker-Hannifin Corporation
6035 Parkland Boulevard
Cleveland, OH 44124-4141
Telephone: (216) 896-2551
Email: tasha.miracle@parker.com

Marcegaglia USA, Inc.'s Designated Representative for Receipt of Notice:

Elisa Scilhanick
General Counsel
Marcegaglia Group
Via Bresciani, 16
46040 Gazoldo degli Ippoliti
MN – Italy
Telephone: +39 0376 665432
Email: elisa.scilhanick@marcegaglia.com

Constitution Drive Partners, LP's Designated Representative for Receipt of Notice:

Richard Heany
President – Constitution Drive Partners, L.P.
2201 Renaissance Blvd., Suite 410
King of Prussia, PA 19406
Telephone: (610) 239-6100
Email: rheany@mlpventures.com

APPENDIX E

DRAFT ENVIRONMENTAL COVENANT FOR THE SOURCE PROPERTY

When recorded, return to:

Jonathan Spergel, Esquire
Manko, Gold, Katcher & Fox, LLP
Three Bala Plaza East, Suite 700
Bala Cynwyd, PA 19004

The County Parcel Identification No. of the Property is: 42-4-321.2

GRANTOR: Constitution Drive Partners, L.P.

PROPERTY ADDRESS: 1 South Malin Road, East Whiteland Township, Chester County

ENVIRONMENTAL COVENANT

This document is an Environmental Covenant executed pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517 (“UECA”). This Environmental Covenant subjects the Property identified in Paragraph 1, below, to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the Commonwealth of Pennsylvania, Department of Environmental Protection (“Department”), and the Consent Decree entered on _____, in the case of *Commonwealth of Pennsylvania Department of Environmental Protection v. Whittaker Corporation, et al.*, U.S.D.C., E.D. of Pa., Civil Action No. 08-cv-6010 (the “Consent Decree”).

1. **Property affected.** The property affected by this Environmental Covenant is located in East Whiteland Township, Chester County, and is referred to herein as the “Property.”

The postal street address of the Property is: 1 South Malin Road, Malvern, PA 19355.

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 40.039781, -75.536710.

The Property has been known by the following name(s): Bishop Tube HSCA Site, Damascus Bishop Tube, The New Bishop Tube, The Bishop Tube Company, Matthey Bishop Plant 8, and Matthey Bishop Plant 5.

The DEP Primary Facility ID# is/are: 617200

A legal description of the Property is attached to this Environmental Covenant as Exhibit A.

A map of the Property is attached to this Environmental Covenant as Exhibit B. A map of impacted soil areas of concern is attached as Exhibit C.

2. **Property Owner/ GRANTOR/ GRANTEE.** Constitution Drive Partners, L.P. is the Owner of the Property and the GRANTOR and GRANTEE of this Environmental Covenant.

3. The mailing address of the Grantor is:

2201 Renaissance Blvd.
Suite 410
King of Prussia, Pa. 19406

4. **Description of Contamination & Remedy.**

The Bishop Tube HSCA Site (“the Site”) consists of areas of groundwater, soil, and surface water that have been impacted by releases of Volatile Organic Compounds (“VOCs”), per- and polyfluoroalkyl substances (“PFAS”), and/or inorganic contaminants of concern (“COCs”). The sources of the contaminated groundwater, surface water and areas of contaminated soil are located on the 13.7-acre former Bishop Tube property (“the Property”). Trichloroethene (“TCE”) is considered the primary Site-related COC because its concentrations within soil, groundwater, and surface water are generally higher than other chlorinated solvents.

On September 12, 2022, the Department issued a Statement of Decision (“SOD”), under the authority of the Hazardous Sites Cleanup Act (HSCA) (35 P.S. §§ 6020.102-6020.1303). In the SOD, the Department selected a Remedial Action at the Site which included, among other things the remediation of impacted soil, and groundwater, on the Property. The Department divided the Site into operable units (“OUs”) and to remediate the Site to as set forth in the SOD. Pursuant to the Consent Decree referenced above, Constitution Drive Partners, L.P. (“CDP”) agreed to perform the Remedial Action in accordance with the SOD and any amendments thereto and the Consent Decree.

OU1 will address soil contamination on the Property. The Department selected In Situ Chemical Oxidation/In Situ Chemical Reduction (“ISCO/ISCR”), Coupled with Soil Mixing, to address areas of elevated COCs in unsaturated and saturated soils, depicted in Exhibit C. The Remedial Action Objectives (“RAOs”) include addressing soil exposure pathways, reducing contaminant transfer and migration to and by groundwater, and preventing erosion during construction and after regrading and/or restoration are completed.

OU2 will address Site groundwater contamination. The Department selected In Situ Injection (“ISCO/ISCR/Bioremediation”). Implementation of this alternative will involve phased injection of amendments to treat the targeted groundwater source areas; engineering and/or institutional controls (“ICs”) to mitigate Site impacts to Little Valley Creek (“LVC”) and address potential future human exposure to COCs in groundwater, resulting from water well installation and/or Vapor Intrusion (“VI”); and long-term monitoring of engineering controls/ICs and ongoing natural attenuation.

An electronic copy of the administrative record, including the SOD, is available to review on the Department’s website, www.dep.pa.gov/bishoptube, or by contacting the Department’s

Southeast Regional Office at 484-250-5910. Additional copies of the administrative record are available for review at East Whiteland Township's Municipal Building.

5. **Activity & Use Limitations.** The Property is subject to the following activity and use limitations, which run with the land and which the then current owner of the Property ("Owner"), and its tenants, agents, employees and other persons under its control, shall comply, unless terminated or modified in accordance with Paragraph 10, below:

- (a) Owner shall not use the Property in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures set forth in the SOD;
- (b) Owner shall refrain from any use of the Property which would disturb or be inconsistent with any response action being implemented or completed;
- (c) Owner shall refrain from intentionally altering, moving or plugging any monitoring well without prior written approval by the Department;
- (d) Owner shall refrain from using groundwater at the Property for any purposes;
- (e) Owner shall comply with the terms of a Department-approved Soil Management Plan ("SMP") for management and disposal of disturbed subsurface strata and soils consistent with Pennsylvania environmental statutes and regulations, including a requirement for any workers handling or exposed to such subsurface strata and soils to develop and comply with a Health and Safety Plan ("HASP"). Owner or the then current owner shall submit the SMP for the Department's review and approval at least 30 days prior to commencement of disturbance of subsurface strata and soils;
- (f) Before any structures at the Property are occupied for either residential or nonresidential purposes, the Owner of the Property shall implement vapor mitigation for such structures, in accordance with the Department's Land Recycling Program Technical Guidance Manual ("TGM"). The then owner of the Property shall submit a vapor investigation/mitigation report to the Department, demonstrating compliance with the TGM, and demonstrating through indoor sample results attainment of acceptable risk criteria to confirm the proper operation of any engineering controls required in order to be protective of the health of occupants of the structures, and await the Department's review and approval confirming compliance with the TGM prior to the occupancy of such structures;
- (g) Owner shall install any additional engineering or institutional controls that may be required in connection with Owner's redevelopment of the Property to be consistent with the SOD and any amendments thereto and to ensure that the level of risk at the Property is not increased beyond the acceptable risk range established under Chapter 3 of Act 2 (which risk evaluation may consider pathway elimination measures). In the event any such additional controls are required, Grantor and/or the then current owner of the Property shall be required to amend this Environmental Covenant to

reflect such additional controls, which amendment shall be subject to the review and approval of the Department, and record the approved, amended Environmental Covenant; and

(h) Pursuant to Paragraph 54 of the Consent Decree, Owner shall grant the Department and the Department's designated agents, including contractors, subcontractors, and responsible persons under the direction of the Department, access to and entry upon the Property for any of the following purposes, or for other purposes set forth under HSCA or CERCLA:

- monitoring the progress of activities taking place;
- verifying any data or information submitted to the Department;
- conducting investigations relating to contamination at or near the Source Property;
- obtaining samples at the Property;
- performing any Remedial Action consistent with or required under the Consent Decree and the SOD and any amendments thereto;
- performing any interim or emergency response as determined to be necessary by the Department or CDP; and
- performing any other actions or activities included in any approved Work Plan or Plan or amendment or supplement thereto under the Consent Decree, to the extent that such actions or activities reasonably require access to the Property.

To the extent the Department requires access to and entry upon the Property and/or that its designated agents, including contractors, subcontractors, and/or any other responsible persons under the direction of the Department, be granted access to and entry upon the Property after the Department issues the written certification of the Remedial Action completion, pursuant to the Consent Decree for any of the above-defined purposes, or for any other purposes set forth under HSCA or CERCLA, while accessing the Property, such parties shall use diligent efforts to minimize interference with the use and enjoyment of the Property by the then owner(s) and occupants of the Property. Such right of access and entry does not limit the Department's right of access of and entry to the Property provided and set forth in Paragraph 8.

6. **Notice of Limitations in Future Conveyances.** Unless and until this Environmental Covenant terminates, each "instrument," as that term is defined in 25 Pa. Code § 253.1, hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Compliance Reporting.** After written request by the Department and by every January 30th following the Department's approval of this Environmental Covenant, the then current owner of the Property shall submit to the Department a written statement of whether or not there is compliance at the Property with the activity and use limitations set forth in Paragraph 5 of this Environmental Covenant. In addition, within one month after any of the following

events, the then current owner of the Property shall submit to the Department written notification of (i) the identification of any noncompliance with the activity and use limitations set forth in Paragraph 5 of this Environmental Covenant, (ii) the transfer of the Property; (iii) changes in use of the Property; or (iv) the filing of an application for a permit for any building or site work at the Property, if the building or site work will affect the contamination on the Property subject to this Environmental Covenant.

8. **Access by the Department.** In addition to any rights already possessed by the Department, this Environmental Covenant grants to the Department a right of reasonable access of the Property in connection with implementation or enforcement of this Environmental Covenant.

9. **Recording & Proof of Notification.** Within 30 days after the date of the Department's approval and execution of this Environmental Covenant, Owner shall file this Environmental Covenant with the Chester County Recorder of Deeds and send a file-stamped copy of this Environmental Covenant to the Department within 90 days of recording. Within that time period, Owner also shall send a file-stamped copy to each of the following: East Whiteland Township and the Chester County Health Department; Whittaker Corporation, Johnson Matthey Inc. and Marcegaglia USA, Inc.

10. **Termination or Modification.**

(a) Except as otherwise provided herein, this Environmental Covenant may only be terminated or modified in accordance with Section 9 or 10 of UECA, 27 Pa. C.S. §§ 6509 or 6510, or in accordance with Paragraph 10.

(b) This Environmental Covenant may be amended or terminated as to any portion of the Property that is acquired for use as state highway right-of-way by the Commonwealth of Pennsylvania provided that: (1) the Department waives the requirements for an environmental covenant and for conversion pursuant to 27 Pa. C.S. §6517 to the same extent that this Environmental Covenant is amended or terminated; (2) the Department determines that termination or modification of this Environmental Covenant will not adversely affect human health or the environment; and (3) the Department provides 30-days advance written notice to the current property owner, and, as practicable, each person that originally signed the Environmental Covenant or successors in interest to such persons.

(c) This Environmental Covenant shall terminate upon attainment, in accordance with 35 P.S. §§ 6026. 101 – 6026.908, with one or a combination of unrestricted use remediation standards for the above-described contamination at the Property. The Department must approve, in writing, such attainment of one or a combination of unrestricted use remediation standards. The termination of the Environmental Covenant shall be recorded pursuant to Paragraph 9 above.

(d) In accordance with 27 Pa. C.S. § 6510(a)(3)(i), Grantor hereby waives the right to consent to any amendment or termination of the Environmental Covenant by consent; it being intended that any amendment to or termination of this Environmental Covenant by consent in accordance with this Paragraph requires only the following signatures on the instrument

amending or terminating this Environmental Covenant: (i) the Holder at the time of such amendment or termination; (ii) the current owner of the Property at the time of such amendment or termination and (iii) the Department. To the extent Grantor and/or Grantee is also the Holder or current property owner at the time of such amendment or termination, the right to consent to any amendment or termination of the Environmental Covenant is retained as the Holder or current property owner.

11. **Department's address.** Communications with the Department regarding this Environmental Covenant shall be sent to: Environmental Group Manager, Hazardous Sites Cleanup Group, Pennsylvania Department of Environmental Protection, Southeast Regional Office, 2 East Main Street, Norristown, Pennsylvania 19401, RA-EP-SEROECB@pa.gov.

12. **Severability.** The Paragraphs of this Environmental Covenant shall be severable and should any part, hereof, be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

Constitution Drive Partners, L.P. Owner/ Grantor/Grantee

Date: _____
By: _____
Name: Richard Heany
Title: President

COMMONWEALTH OF PENNSYLVANIA) [other state, if executed outside PA]
)
COUNTY OF _____) SS:

On this ___ day of _____, 20___, before me, the undersigned officer, personally appeared Richard Heany, President of Constitution Drive Partners, L.P., who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

Exhibit A

Legal Description of the Property

**Lawyers Title Insurance Corporation
National Headquarters - Richmond, Virginia**

**OWNER'S POLICY
SCHEDULE C**

CASE NUMBER	POLICY NUMBER
04111079ML	A75-0248881

Legal Description

ALL THAT CERTAIN lot or piece of ground with the buildings and improvements thereon erected, Situate in the Township of East Whiteland, County of Chester and Commonwealth of Pennsylvania, described in accordance with a Subdivision Plan of land of Matthey Bishop Co., made by Yerkes Engineering Co., Consulting Engineers and Surveyors of West Chester, Pennsylvania, dated February 26, 1969 as follows, to wit:

BEGINNING at a point formed by the intersection of the center line of Malin Road and the Southerly right of way line of the Pennsylvania Railroad Co., (Trenton Cut-Off) 200 feet wide; thence extending from said beginning point and along said Southerly right of way line of the Pennsylvania Railroad Co. (Trenton Cut-Off) 200 feet wide; North 83 degrees 46 minutes East 964.72 feet to a point; thence extending South 6 degrees 14 minutes East crossing the head of Village Development, lands or various owners in the General Warren Village Development, 682.73 feet to a point; thence extending South 82 degrees 2 minutes West along the Northerly line of Tract #2 as shown on said plan, 754.66 feet to a point; thence extending North 22 degrees 42 minutes West partly along the center line of an existing right of way and partly along the center line of Malin Road aforesaid; 573.49 feet to a point; thence extending North 23 degrees 19 minutes 40 seconds West still along the center line of Malin Road 162.78 feet to the first mentioned point and place of be

BEING Tract #1 as shown on said plan.

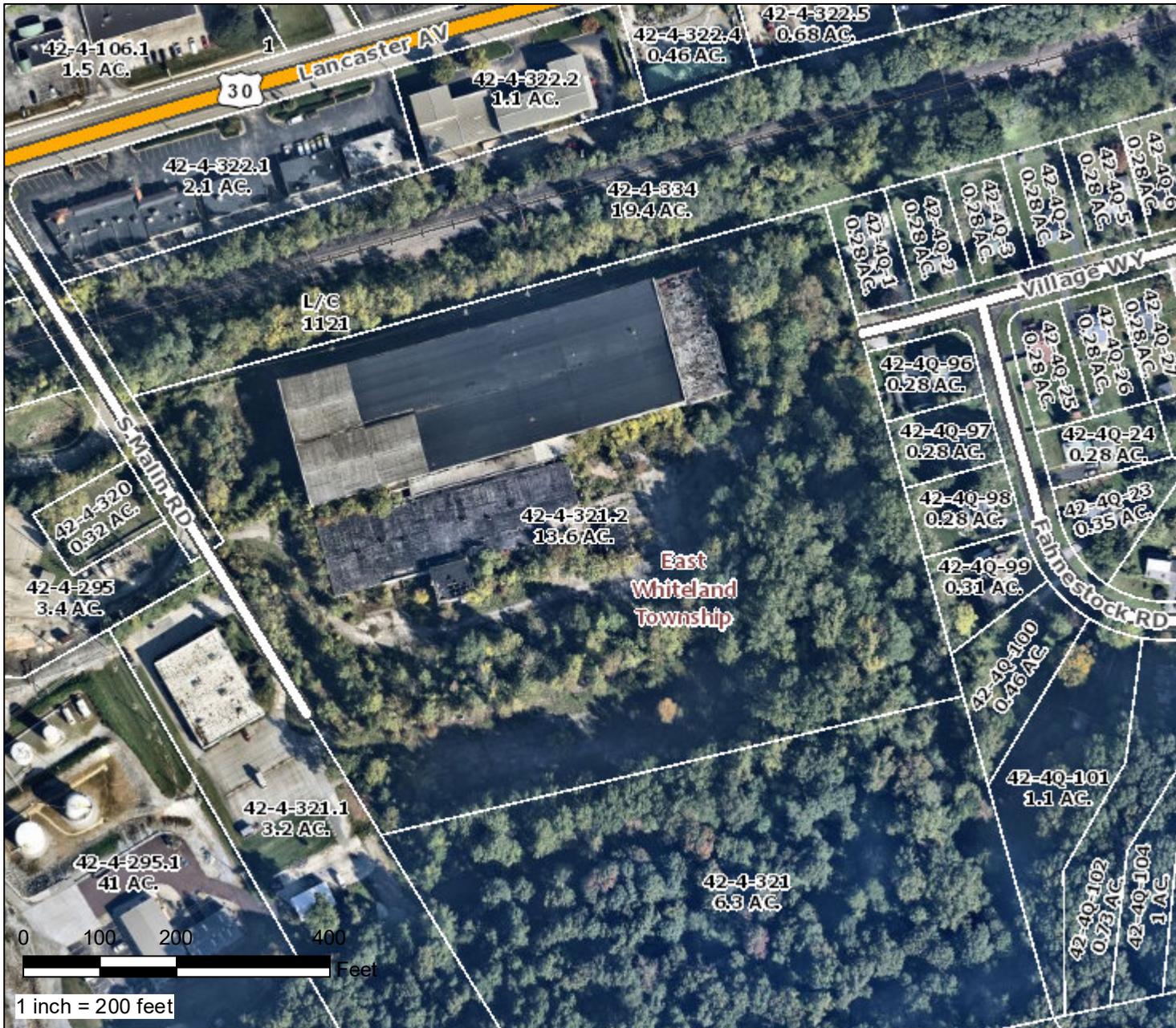
BEING Parcel No. 42-4-321.2.

BEING the same premises which Central & Western Chester County Industrial Development Authority County Industrial Development, by Deed dated February 21, 2005 and recorded March 24, 2005 in Chester County in Book 6443, Page 1567 granted and conveyed unto Constitution Drive Partners, LP, in fee.

Exhibit B

Map of the Property

Exhibit B Former Bishop Tube Property



COUNTY OF CHESTER
PENNSYLVANIA



Map Created:
Thursday, February 22, 2024

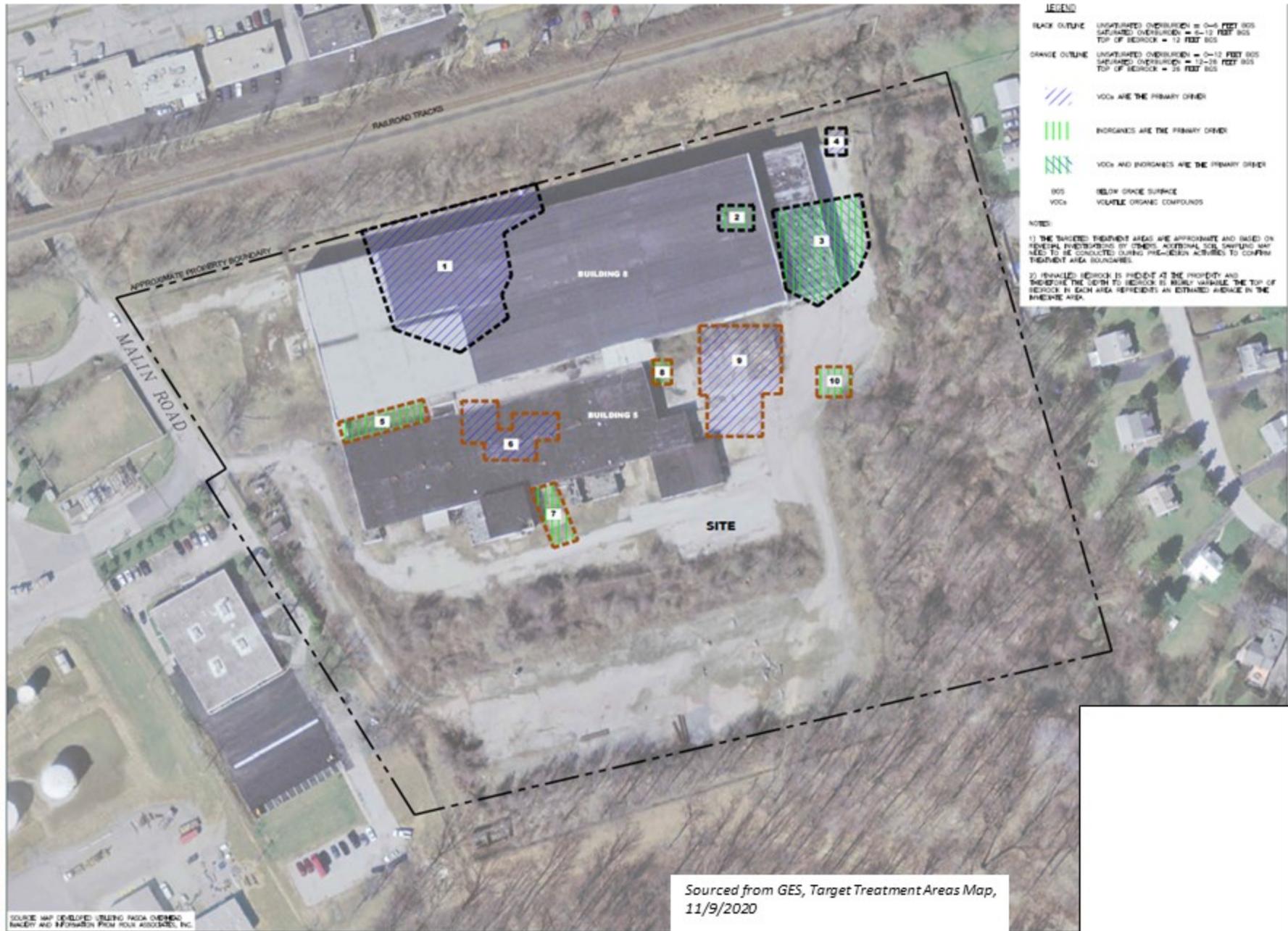
County of Chester



Limitations of Liability and Use:
County of Chester, Pennsylvania makes no claims to the completeness, accuracy, or content of any data contained herein, and makes no representation of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor are any such warranties to be implied or inferred with respect to the information or data furnished herein. For information on data sources visit the GIS Services page listed at www.chesco.org/gis.

Exhibit C

Map of Soil Areas of Concern



- LEGEND**
- BLACK OUTLINE UNSATURATED OVERLIEKEN = 0-4 FEET BOS
SATURATED OVERLIEKEN = 5-12 FEET BOS
TOP OF BEDROCK = 12 FEET BOS
 - ORANGE OUTLINE UNSATURATED OVERLIEKEN = 0-15 FEET BOS
SATURATED OVERLIEKEN = 12-25 FEET BOS
TOP OF BEDROCK = 25 FEET BOS
 - [Blue diagonal lines] VOCs ARE THE PRIMARY DRINK
 - [Green vertical lines] INORGANICS ARE THE PRIMARY DRINK
 - [Green diagonal lines] VOCs AND INORGANICS ARE THE PRIMARY DRINK
 - BOS BELOW GRADE SURFACE
 - VOCs VOLATILE ORGANIC COMPOUNDS

NOTES:

1) THE TARGETED TREATMENT AREAS ARE APPROXIMATE AND BASED ON SEVERAL PRELIMINARY DATA. ADDITIONAL DATA SAMPLING MAY NEED TO BE CONDUCTED DURING PRE-REMEDIATION ACTIVITIES TO CONFIRM TREATMENT AREA BOUNDARIES.

2) PENETRATED BEDROCK IS PRESENT AT THE PROPERTY AND THEREFORE THE DEPTH TO BEDROCK IS HIGHLY VARIABLE. THE TOP OF BEDROCK IN EACH AREA REPRESENTS AN ESTIMATED AVERAGE IN THE REMEDIATION AREA.

Sourced from GES, Target Treatment Areas Map, 11/9/2020

SOURCE MAP DEVELOPED UTILIZING PUBLIC OVERLIEKEN DATA AND INFORMATION FROM FOUR ASSOCIATES, INC.

APPENDIX F

DRAFT CONSENT ORDER AND AGREEMENT
(PROSPECTIVE PURCHASER AGREEMENT)

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In The Matter Of:

[Name]	:	Prospective Purchaser Agreement
[Address]	:	
[Address]	:	Bishop Tube HSCA Site
[Address]	:	1 South Malin Road, Malvern, PA
[Address]	:	East Whiteland Township, Chester County

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this _____ day of _____,
by and between the Commonwealth of Pennsylvania, Department of Environmental Protection
("Department") and [*Name of the Purchaser*] ("the Purchaser").

The Department has found and determined the following:

The Parties

A. The Department is the agency with the duty and authority to administer, enforce, and implement the Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756, No. 108, 35 P.S. § 6020.101 et seq. ("HSCA"); the Solid Waste Management Act, Act of July 7, 1980, P.L. 380, as amended, 35 P.S. § 6018.101 et seq. ("Solid Waste Management Act"); the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1 et seq. ("Clean Streams Law"); the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §§ 9601-9675 ("CERCLA"); the Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1995, P.L. 4, No. 1995-2, 35 P.S. Section 6026.101 et seq. ("Act 2"); the Uniform Environmental Covenants Act, the Act of December 18, 2007,

P.L. 450, No. 68, as amended, 27 Pa. C.S. § 6501 et seq. (“UECA”); and Section 1917 A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510 17 (“Administrative Code”); and the rules and regulations promulgated thereunder (“Regulations”).

B. The Purchaser is [*Identify the Purchaser i.e. name, business entity type, state registration, address*].

The Property

C. The Property, owned by the Constitution Drive Partners, L.P. (“CDP”), consists of a lot of 13.7 acres and all improvements thereon, located at 1 South Malin Road, Malvern, Pennsylvania, Chester County Tax Parcel ID No. 42-4-321.2 (the “Property”).

D. The Property is the source property associated with the Bishop Tube HSCA Site, a site as defined in Section 103 of HSCA, 35 P.S. § 6020.103 (“Site”).

E. Manufacturing occurred at the Property from the 1950s through the 1990s, during which hazardous substances and/or contaminants were stored, used, and released.

F. The Site also includes the soil, groundwater, and surface water at and near the Property where hazardous substances and/or contaminants that were released from the Property have come to be located.

G. CDP purchased the Property from the Central and Western Chester County Industrial Development Authority in 2005, with the intention of redeveloping the property for commercial/light industrial use.

H. In 2014, East Whiteland Township rezoned the Property for residential use at the request of CDP.

I. CDP has subsequently pursued Township approval of a residential development on the Property. [*To be updated if approval obtained.*]

Contamination of the Property/Remedial Action

J. Pursuant to Section 501(a) of HSCA, 35 P.S. § 6020.501(a), the Department conducted investigations to define the nature and extent of any release or threatened release of hazardous substances and/or contaminants at the Site. CVOCs, inorganic hazardous substances, and/or contaminants, identified in more detail, below, have been detected in soil, groundwater, and surface water in excess of applicable Act 2 residential and non-residential Statewide health standards. Reports of these investigations are included within the Administrative Record¹ for the Site.

K. The past and present conditions at the Site, identified in the investigation reports compiled in the Administrative Record, demonstrate that a release and/or threatened release of hazardous substances and/or contaminants has occurred and/or is occurring at the Site as defined in Section 103 of HSCA, 35 P.S. § 6020.103, and a release and/or disposal of hazardous substances and/or contaminants has occurred at the Site, as defined in Section 101(2) of CERCLA, 42 U.S.C. § 9601(22).

L. Pursuant to Section 501(a) of HSCA, 35 P.S. § 6020.501(a), the Department has determined that a response is necessary to abate the release and/or threatened release of hazardous substances and/or contaminants.

M. The Department has determined that the release and/or threatened release of hazardous substances and/or contaminants, referenced in the preceding Paragraphs, constitute(s) a statutory public nuisance under Section 1101 of HSCA, 35 P.S. § 6020.1101.

¹ The Administrative Record is the record created pursuant to HSCA which outlines the contamination at the Site and the remedial response action selected by the Department for the Site. The Administrative Record for the Site is maintained and available for review at the Department's Southeast Regional Office, Records Management Officer, 2 East Main Street, Norristown, PA 19401 and at the East Whiteland Township Municipal Building.

N. The Site was placed on the Pennsylvania Priorities List for remedial action by publication in the *Pennsylvania Bulletin* on September 11, 2010, pursuant to Section 502 of HSCA, 35 P.S. § 6020.502.

O. “Remedial Action” shall mean all of the response actions taken or to be taken at the Site, pursuant to the Statement of Decision (“SOD”) contained in the Administrative Record and any amendments thereto, to address the release and threatened release at or from the Site of hazardous substances and/or contaminants identified and discussed in the Administrative Record, which actions include, but are not limited to, investigations of responsible persons, investigations of conditions at the Site, the cleanup actions at the Property and maintenance of those actions, in accordance with the definition of “response” set forth Section 103 of HSCA, 35 P.S. §6020.103.

P. The SOD containing the selected Remedial Action for the Site was filed by the Department into the Administrative Record on September 21, 2022, pursuant to Sections 505(a) and 506(e) of HSCA, 35 P.S. §§ 6020.505(a) and 6020.506(e).

Q. The Department’s selected Remedial Action, as set forth in the SOD, includes In Situ Chemical Oxidation/In Situ Chemical Reduction (“ISCO/ISCR”), coupled with soil mixing in select areas of concern to address unsaturated and saturated soils impacted by Site COCs (“Operable Unit 1 (“OU1”)); In Situ Injection of ISCO/ISCR or bioremediation amendments in the two primary source areas to address contaminated groundwater (“OU2”); and connection of one nearby residence with an impacted private well to the existing public waterline (“OU3”). The Department also filed a response to public comments into the Administrative Record. A true and correct copy of the SOD is incorporated into this Consent Order and Agreement by reference and is attached, hereto, as Appendix A.

R. From May 19, 2000 through April 30, 2022, the Department incurred \$4,233,483

in response costs expended in connection with the Site.

S. The Department has continued and will continue to incur recoverable response costs from May 1, 2022 onward.

T. On [Date], HSCA, 35 P.S. § 6020.1113, the Department, under the authority of HSCA and CERCLA, entered into a Consent Decree with Whittaker Corporation (“Whittaker”), Johnson Matthey Inc. (“JMI”), Marcegaglia USA, Inc. (“Marcegaglia”), and CDP (collectively “the Settlers”). The Department has alleged that the Settlers are potentially responsible persons in accordance with Section 701 of HSCA, 35 P.S. § 6020.701, and Section 107 of CERCLA, 42 U.S.C. § 9607, with respect to the release and/or threat of release of hazardous substances and/or contaminants at the Site. The Settlers have agreed to establish a qualified settlement trust fund to fund the Remedial Action at the Site. JMI and Whittaker, jointly, have agreed to pay Seven Million Three Hundred and Thirty-Five Thousand Dollars (\$7,335,000) less the necessary and appropriate cost of implementing the Remedial Action for OU3 of the Site that the Department has reimbursed or approved for reimbursement to JMI and Whittaker which is equal to one hundred and six thousand six hundred and fifty-one dollars and forty-nine cents (\$106,651.49); CDP has agreed to pay One Million Two Hundred and Fifty Thousand Dollars (\$1,250,000); and Marcegaglia has agreed to pay Four Hundred Thousand Dollars (\$400,000). The Trust also contains a financial assurance fund of Two Million Five Hundred Thousand Dollars (\$2,500,000), which has been funded by JMI, Whittaker, and Marcegaglia. The Consent Decree establishes, among other things, deadlines for the submittal of work plans, cost estimates and reports associated with the implementation of the Remedial Action and requires performance of various work activities to implement the Remedial Action. CDP has agreed in the Consent Decree to serve as the Settlor Work Party to perform most aspects of the Remedial Action in

accordance with the SOD and any amendments thereto.

U. *[Describe Remedial Action completed to date and what needs to be completed.]*

V. *[Include if Environmental Covenant recorded: “On [Date], an Environmental Covenant was attached to the deed of the Property, or any parts of the property, thereto, with the Recorder of Deeds of Chester County, which sets forth various activity use limitations to protect engineering and/or other institutional controls to protect the completed Remedial Action activities at the Site, as set forth in detail in the Environmental Covenant.”]*

The Proposed Sale

W. The Purchaser is interested in acquiring the Property, for *[Describe the purchaser’s plans to use the property]*.

X. The Purchaser represents to the Department and hereby certifies that it neither caused nor contributed to, nor is otherwise liable for, any release and/or threat of release of hazardous substances or contaminants at the Site. The Department is not aware of any information to the contrary that would indicate such responsibility or liability.

Y. The Purchaser desires to resolve any potential liability it may incur from the purchase of the Property for the releases at the Site through this Consent Order and Agreement. The Department has determined that it is in the public interest to resolve the foregoing matter without litigation and to enter into a settlement with the Purchaser.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by the Purchaser as follows:

1. ***Authority.*** This Consent Order and Agreement is an Order of the Department

authorized and issued pursuant to Section 1102 of the HSCA, 35 P.S. § 6020.1102; and Section 1917-A of the Administrative Code, 71 P.S. § 510-17.

2. ***Findings.***

a. In any matter or proceeding between the Purchaser and the Department, the Purchaser shall not challenge or deny the Department's assertion of the truth, accuracy, or validity of Paragraphs A through Y, above.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

3. ***Corrective Action.*** [*Actions to be required of the Purchaser which may include implementation of post remedial care activities.*].

4. ***Reimbursement of Response Costs.*** Within thirty (30) days of the Effective Date, as that term is defined in Paragraph 30, below, the Purchaser shall pay to the Department the sum of _____ Dollars (\$_____) for response costs incurred by the Department. [*Choose depending on the situation at the time of settlement: Payment shall be made by corporate check or the like made payable to the "The Bishop Tube Site QSF" and shall be sent to de maximis, inc., 450 Mountbrook Lane, Knoxville, TN 37919-2705, or "Commonwealth of Pennsylvania, Hazardous Sites Cleanup Fund" and sent to [Name], Hazardous Sites Cleanup Program, Pennsylvania Department of Environmental Protection, 2 East Main Street, Norristown, PA 19401.*]

5. ***Stipulated Civil Penalties.***

a. In the event the Purchaser fails to comply in a timely manner with any term or provisions of this Consent Order and Agreement, the Purchaser shall be in violation of this

Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty in the amount of One Hundred Dollars (\$100) per day for each violation.

b. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month and shall be submitted in accordance with Paragraph 16 (Correspondence with the Department), below.

c. Any payment under this paragraph shall neither waive the Purchaser's duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel the Purchaser's compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only the Purchaser's liability for civil penalties arising from the violations of this Consent Order and Agreement for which the payment is made.

d. Stipulated civil penalties shall be due automatically and without notice.

6. ***Implementation, Operation and Maintenance of Engineering Controls.*** Prior to the occupancy of any structures at the Property, the Purchaser shall install and confirm the proper operation of any engineering controls required in order to be protective of the health of occupants of the structures, in accordance with the Environmental Covenant, recorded for the Property on _____ in Deed __ Book _____. After installation of any such engineering controls, the Purchaser shall be required to operate, maintain, and assure the adequate soundness and ongoing implementation of such engineering controls at the Property during the Purchaser's ownership of the Property.

7. ***Future Amendments of the Environmental Covenant.*** The Purchaser shall cooperate with CDP and the Department in the event that the Department requires recording of an amendment of the Environmental Covenant after the Property has been conveyed to the

Purchaser, including, if necessary, execution of any such amendment by or for the Purchaser and recordation of the amendment on the deed of the property by the Purchaser.

8. ***Access and Entry.*** The Purchaser hereby agrees that the Department and its representatives, including contractors and subcontractors, shall have access at all times to the areas owned by the Purchaser, where activities are being performed pursuant to the Consent Decree, referenced in Paragraph T, for any of the following purposes, or for other purposes set forth under HSCA or CERCLA:

- a. monitoring the progress of activities taking place;
- b. verifying any data or information submitted to the Department;
- c. conducting investigations relating to contamination at or near the
Property;
- d. obtaining samples at the Property described above;
- e. inspecting and copying records, operating logs, contracts, or other
documents required to assess the Purchaser's compliance with this Consent Order and
Agreement;
- f. performing any Remedial Action activities, consistent with or required
under the Consent Decree referenced in Paragraph T and the SOD referenced in
Paragraph(s), O, P, and Q, herein, should CDP not adequately perform such activities or
if otherwise needed, as determined by the Department;
- g. performing any interim or emergency response as determined to be
necessary by the Department; and
- h. performing any other actions or activities included in any approved Work
Plan or Plan or amendment or supplement thereto under the Consent Decree referenced in

Paragraph T should CDP not adequately perform such activities or if otherwise needed, as determined by the Department, to the extent that such actions or activities reasonably require access to the Property subject to this Paragraph.

i. Nothing in the preceding Paragraph is intended to limit in any way the right of entry or inspection that the Commonwealth of Pennsylvania, its agencies, or departments may otherwise have by operation of any law.

9. ***Additional Remedies.***

a. In the event the Purchaser fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including an action for civil penalties or action to enforce this Consent Order and Agreement.

b. The remedies provided by this paragraph and Paragraph 5 (Stipulated Civil Penalties) are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated civil penalty, however, shall preclude any further assessment of civil penalties for the violation for which the stipulated penalty is paid.

10. ***Department's Covenant not to Sue.*** Subject to Paragraph 11 (Reservation of Rights), below, and provided that the Purchaser is in full compliance with the terms and conditions of this Consent Order and Agreement and CDP is in full compliance with all terms of the Consent Decree, referenced in Paragraph T, the Department covenants not to sue or take civil or administrative action against the Purchaser for response costs, response actions and/or

injunctive relief arising from the Existing Contamination.² This covenant not to sue extends only to the Purchaser, and shall terminate for the Purchaser, respectively, upon failure to comply with any of the requirements of this Consent Order and Agreement or upon CDP's failure to comply with all terms of the Consent Decree and/or CDP's failure to remediate the Site in accordance with the requirements of HSCA or the Consent Decree. This covenant not to sue shall take effect upon the Effective Date as defined in Paragraph 30, below.

11. ***Reservation of Rights.***

a. Notwithstanding any other provision of this Consent Order and Agreement, the Department reserves the right to take any action, administrative or otherwise, against the Purchaser with regard to the releases or threatened releases at the Site, if the Department receives previously unknown information that indicates that the Purchaser caused, contributed to, or is otherwise liable for any releases or threat of releases of hazardous substances or contaminants at the Site, or if the Purchaser or its officers, directors, employees, agents, or contactors has made or makes an incomplete, false or in any material respect inaccurate representation or statement in a record, report or document relating to the release or threatened release of hazardous substances or contaminants at the Site, and the Purchaser agrees not to raise any statute of limitations or laches defense to such action. For purposes of this paragraph, the information known to the Department includes only the information set forth in this Consent Order and Agreement.

b. The Department's covenant not to sue set forth in Paragraph 10, above, shall not apply to the following claims by the Department against the Purchaser for:

i. failure to comply with this Consent Order and Agreement;

² For purposes of this Consent Order and Agreement, "Existing Contamination" shall mean any releases and/or threatened releases of hazardous substances and/or contaminants at the Site, as identified in the SOD, and the Administrative Record, as identified above. [*and describe any additional Remedial Action activities that have taken place to date*].

- ii. past, present or future releases or threatened releases of hazardous substances or contaminants outside the boundaries of the Site;
- iii. future releases or threatened releases of hazardous substances or contaminants within the boundaries of the Site;
- iv. past, present or future violations of state or federal criminal law; and
- v. natural resources damages, or damages for injury to, destruction of, or loss of “natural resources” as that term is defined in Section 103 of HSCA, 35 P.S. § 6020.103.

c. With regard to all matters not expressly addressed in this Consent Order and Agreement, nothing in this Consent Order and Agreement is intended, nor shall it be construed, to relieve or limit any obligation on the part of the Purchaser to comply with any applicable existing or subsequent statute, regulation, permit or order of the Department. In addition, nothing in this Consent Order and Agreement is intended, nor shall it be construed, to authorize any violation of any statute, regulation, order or permit issued by the Department. With regard to all matters not expressly addressed in this Consent Order and Agreement, the Department specifically reserves all rights to institute equitable, administrative, civil or criminal actions for any past, present or future violation of any statute, regulation, permit or order, or for any pollution or potential pollution to the air, land, or waters of the Commonwealth.

12. ***The Purchaser’s Covenant Not to Sue.*** The Purchaser covenants not to sue and shall not assert any claims, demands or causes of action, in law or in equity, against the Commonwealth, including the Department, arising from the release and/or threatened release of hazardous substances or contaminants at the Site, arising out of response actions at the Site, or arising out of this Consent Order and Agreement. This covenant not to sue extends only to the

Commonwealth, including the Department, and does not extend to any other person.

13. **Contribution Protection.** Subject to Paragraph 11 (Reservation of Rights), the Department agrees that, by entering into this Consent Order and Agreement, the Purchaser is the person who has resolved its liability to the Commonwealth for the releases and/or threatened releases of hazardous substances or contaminants at the Site and are, therefore, eligible for any legally existing protection from claims for contribution, as provided by Section 705(c) of HSCA, 35 P.S. § 6020.705(c), regarding matters addressed in this Consent Order and Agreement. This contribution protection shall take effect upon the Purchaser's payment of response costs pursuant to Paragraph 4, above, extends only to the Purchaser, and shall terminate with respect to the Purchaser upon the Purchaser's failure to meet any of the requirements of this Consent Order and Agreement or upon CDP's failure to comply with all terms of the Consent Decree referenced in Paragraph T or its failure to remediate the Site in accordance with the requirements of HSCA or the Consent Decree. The Purchaser acknowledges that the Department has no obligation to defend them in any suit, demand or claim for contribution for any matters arising from the release or threatened release of hazardous substances or contaminants at the Site, arising out of response actions at the Site, or arising out of this Consent Order and Agreement.

14. **Liability of the Purchaser.** The Purchaser shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. The Purchaser also shall be liable for any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns.

15. ***Transferability.***

a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated, or otherwise altered by the transfer of any legal or equitable interest in the Property or any part thereof.

b. If the Purchaser intends to transfer any legal or equitable interest in all or a portion of the Property which is affected by this Consent Order and Agreement to any party other than a prospective purchaser of a residential lot, the Purchaser shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Southeast Regional Office of the Department of such intent.

c. This Consent Order and Agreement shall be transferable to subsequent owner(s) of the Property (“Transferee(s)”) who did not cause or contribute to and is/are not otherwise liable for contamination at the Site, provided that any future Transferee, other than a prospective purchaser of a residential lot, enters into the Prospective Purchaser Agreement with the same or substantially similar terms as this Consent Order and Agreement, modified only to include the appropriate identifying and contact information for the future Transferee and Department personnel, before or at the closing for the Property, and, by that time, makes payment to the Department in the amount of _____ Dollars (\$_____) for response costs, plus 10% upward adjustment per annum after the Effective Date. Payment shall be made by corporate check or the like made payable to the “The Bishop Tube Site QSF” and shall be sent to de maximis, inc., 450 Mountbrook Lane, Knoxville, TN 37919-2705, or payment shall be made by corporate check or the like made payable to the “Commonwealth of Pennsylvania, Hazardous Sites Cleanup Fund” and sent to [Name], Hazardous Sites Cleanup Program, Pennsylvania

Department of Environmental Protection, 2 East Main Street, Norristown, PA 19401, if the Bishop Tube Site QSF has been terminated, in accordance with the Consent Decree and/or the trust agreement created pursuant to the Consent Decree referenced in Paragraph T.

d. Provided the Purchaser is not then in violation of any provisions of this Consent Order and Agreement, the Purchaser's duties and obligations under this Consent Order and Agreement, set forth at Paragraphs 3 through 8, shall terminate upon transfer of all or a portion of the Property with response to the portion of the Property transferred.

e. Pursuant to Section 701(b)(2) of HSCA, current and future single-family resident homeowners at the Property who did not place hazardous substances on the Property are not subject to HSCA liability for any releasees or threatened releases of hazardous substances at the Property.

16. ***Correspondence with Department.*** All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

[Name]
HSCA Group Manager
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 E. Main Street
Norristown, PA 19401
Email: *[email]*

With copy to:

[Name]
[Title]
Pennsylvania Department of Environmental Protection
Southeast Regional Office
Office of Chief Counsel
2 East Main Street
Norristown, PA 19401
Email: *[email]*

17. ***Correspondence with Purchaser.*** All correspondence with Purchaser concerning

this Consent Order and Agreement shall be addressed to:

[Name]
[Title]
[Street Address]
[City, State and Zipcode]
Email: *[email]*

The Purchaser shall notify the Department whenever there is a change in the contact person's name, title, or address. The Purchaser agrees that service of any notice, document, or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made electronically by email to the above email address or by mailing a copy by first class mail to the above address.

18. ***Severability.*** The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

19. ***Entire Agreement.*** This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

20. ***Attorney Fees.*** The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

21. ***Modifications.*** No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

22. ***Titles.*** A title used at the beginning of any paragraph of this Consent Order and

Agreement may be used to aid in the construction of that paragraph but shall not be treated as controlling.

23. ***Hazardous Sites Cleanup Act.*** The Purchaser agrees that failure to comply with the provisions of Paragraphs 3 through 8 of this Consent Order and Agreement constitutes a failure to comply with an “enforcement action” as provided in Section 1301 of the Hazardous Sites Cleanup Act, the Act of October 18, 1988, P.L. 756, 35 P.S. § 6020.1301.

24. ***Decisions Under Consent Order.*** The Purchaser waives its rights to appeal to the Environmental Hearing Board any decision that the Department makes under the provisions of this Consent Order and Agreement, including a notice that stipulated civil penalties are due, which rights may be available under Section 4 of the Environmental Hearing Board Act, the Act of July 13, 1988, P.L. 530, No. 1988-94, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provision of law. The Department agrees that any objection that the Purchaser may have to any such decision may be raised as a defense in any Court where the Department enforces this Consent Order and Agreement.

25. ***Non-Exacerbation.*** The Purchaser and its agents, successors, or assigns shall not contribute to or otherwise exacerbate, by act or failure to perform a legal duty, the Existing Contamination. In the event that the Purchaser discovers or is otherwise placed on notice that it has contributed to or otherwise exacerbated the Existing Contamination, the Purchaser shall immediately notify the Department and take steps to abate any such exacerbation in a manner approved by the Department.

26. ***Non-Interference.*** The Purchaser shall not interfere with or impair any response actions taken by the Department or any other person or entity under the auspices of the Department with regard to the Existing Contamination. The Purchaser and its agents, successors,

or assigns shall not conduct any activity at the Property that would be inconsistent with, or disturb, the response actions at the Property.

27. **Termination.** This Consent Order and Agreement shall terminate and otherwise be null and void if the Purchaser fails to obtain title to the Property within 180 days of the Effective Date as defined in Paragraph 30, below.

28. **Execution of Agreement.** This Consent Order and Agreement may be signed in counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument.

29. **Opportunity for Public Comment.** Pursuant to Section 1113 of HSCA, 35 P.S. § 6020.1113, the Department shall publish a notice in the *Pennsylvania Bulletin* and the *Daily Local News* containing a summary of the terms of this Consent Order and Agreement. This notice shall also be sent to the persons named in Paragraph 17. The Department shall receive and consider comments relating to this Consent Order and Agreement for sixty (60) days from publication of this notice. The Department reserves the right to withdraw its consent to this Consent Order and Agreement, if the comments disclose facts or considerations which indicate that this Consent Order and Agreement is inappropriate, improper, or not in the public interest.

30. **Effective Date.** This Consent Order and Agreement shall be effective upon the date that the Department notifies Settlor, in writing, that this Consent Order and Agreement is final and effective in its present form and that the Department has filed a response to any significant written comments received pursuant to Paragraph 29, (Opportunity for Public Comment) or that no such comments were received. However, if the Department notifies the Purchaser that it is withdrawing its consent to this Consent Order and Agreement in response to the public comments received pursuant to Paragraph 29, the terms of this Consent Order and Agreement shall be void, shall have

no force or effect, and shall not be used as evidence in any litigation or any other proceeding.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of the Purchaser certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of the Purchaser; that the Purchaser consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that the Purchaser hereby knowingly waives its right to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, Act of July 13, 1988, P.L. 530, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provisions of law. (Signature by the Purchaser's attorney certifies only that the agreement has been signed after consulting with counsel.)

FOR THE PURCHASER:

FOR THE COMMONWEALTH OF
PENNSYLVANIA, DEPARTMENT OF
ENVIRONMENTAL PROTECTION:

Name
Title

Name
Title

Name
Title

Name
Attorney for the Purchaser

Name
Assistant Counsel

APPENDIX A
STATEMENT OF DECISION