UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

FINAL DECISION AND RESPONSE TO COMMENTS TRADEPOINT ATLANTIC

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC or Final Decision) selecting the Final Remedy for the Tin Mill Canal (TMC), Parcel B16, located on the 3,100-acre Sparrows Point Facility (SPF or Facility) owned by Tradepoint Atlantic (TPA) in Baltimore Harbor. The Final Decision is issued pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Sections 6901, et seq. (RCRA).

The Facility is subject to RCRA's Corrective Action Program which is designed to ensure that owners and operators of certain facilities subject to RCRA investigate and address releases of hazardous waste and hazardous constituents, often in the form of soil or groundwater contamination, that have occurred at or from their property. The State of Maryland (Maryland) is not authorized for the Corrective Action Program under Section 3006 of RCRA, therefore, EPA retains primary authority in Maryland to implement it.

Corrective Action obligations have been performed at the Facility pursuant to a 1997 federal Consent Decree (CD) entered into under Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), among other authorities, by Bethlehem Steel Corporation (BSC), the Maryland Department of Environment (MDE), and EPA (Civil Action Nos. JFM-97-558 and JFM-97-559) and a 2014 Settlement Agreement and Covenant Not to Sue Sparrows Point Terminal, LLC (SA) (Docket #CERCLA/RCRA-03-2014-0279PP) entered into by Sparrows Point Terminal LLC, EPA and MDE.

On July 26, 2017, EPA issued a Statement of Basis (SB) in which it proposed a Final Remedy for the TMC and an interim remedy for groundwater until a final remedy for Facility-wide groundwater is selected, and solicited public comment on its proposal consistent with the public participation provisions under RCRA. The SB is hereby incorporated into this Final Decision by reference and made a part hereof as Attachment A. The only comments received by EPA during the comment period were contained in a letter dated August 25, 2017 submitted jointly by the Chesapeake Bay Foundation and Blue Water Baltimore (CBF/BWB), a copy of which is included as Attachment B.

EPA has reviewed CBF/BWB's comments and EPA's responses thereto are provided in Attachment C. After its review of CBF/BWB's comments, EPA has determined that it is not necessary to modify its proposed Final Remedy as set forth in the SB; thus, the remedy proposed in the SB is the Final Remedy for the TMC.

DECLARATION

Based on the Administrative Record compiled for the corrective action at TMC, I have determined that the remedy selected in this Final Decision and Response to Comments, which incorporates the July 26, 2017 Statement of Basis, is protective of human health and the environment.

Date: 10/25/17

Martha Shimkin, Acting Director
Land and Chemicals Division
U.S. Environmental Protection Agency, Region III

Attachment A: Statement of Basis
Attachment B: Public Comments
Attachment C: Response to Comments

ATTACHMENT A

STATEMENT OF BASIS

THE TIN MILL CANAL (TMC OR CANAL), PARCEL B16

TRADEPOINT ATLANTIC

SPARROWS POINT, MARYLAND
MDD053945432

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

July 2017

Parcel B16 Tin Mill Canal

Tradepoint Atlantic

Sparrows Point, Maryland

MDD053945432

Table of Contents

I. Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the Tin Mill Canal (TMC or Canal), Parcel B16, located on the 3,100-acre Sparrows Point Facility (Facility) in Baltimore Harbor. Tradepoint Atlantic (TPA), the current owner of the Facility, is subdividing the Facility into parcels for redevelopment.

The Facility is subject to EPA's Corrective Action authorities under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq. The Corrective Action Program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, often in the form of soil or groundwater contamination, that have occurred at or from their property. Maryland is not authorized for the Corrective Action Program under Section 3006 of RCRA, therefore, EPA retains primary authority in the State of Maryland to implement it.

EPA's proposed remedy for sediments at Parcel B16 is: 1) excavation of accumulated sediments to base grade; 2) installation of a protective cap and cover to restrict human contact, and prevent cross-media transfer from the remaining residual contamination in the sediments, using a geosynthetic cover and slag; 3) land use restrictions preventing land use, and 4) operation and maintenance requirements to ensure the protectiveness and integrity of the remedy.

EPA will issue a separate SB for Facility-wide groundwater, including groundwater at Parcel B16, to solicit public comment once the groundwater at the entire Facility has been evaluated under the Corrective Action program. In the interim, in this SB, EPA is proposing to require groundwater use restrictions at Parcel B16 to prevent potable use of shallow groundwater until a final remedy for Facility-wide groundwater is selected.

EPA is providing a thirty (30) day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended.

Information on the RCRA Corrective Action Program as well as a fact sheet for the Facility can be found by navigating to https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-sparrows-point-llc-sparrows-point-md. An index to the Administrative Record (AR) which supports this SB is attached as Attachment 1, and references all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section VIII, Public Participation, for information on how you may review the AR.

II. Background

A. History

The Facility comprises a 3,100-acre peninsula in Baltimore Harbor (Sparrows Point Peninsula or Peninsula), generally bounded by the Back River, Bear Creek, and the Northwest Branch of the Patapsco River. In 1887 Maryland Steel built an iron furnace on the Facility, and the first iron was cast in 1889. The Bethlehem Steel Corporation (BSC) purchased the property in 1916 and enlarged it, building mills to produce hot rolled sheet, cold rolled sheet, galvanized sheet tin mill products, and steel plate. During peak production in 1959, BSC operated 12 coke-oven batteries, 10 blast furnaces, and four open-hearth furnaces at the Facility.

This SB summarizes work undertaken under a 1997 federal consent decree and a 2014 settlement agreement, as detailed below. RCRA Corrective Action work is ongoing at the Facility.

In 1997 the Federal District Court for the District of Maryland entered a Consent Decree (CD) under Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), that had been signed by BSC, the Maryland Department of Environment (MDE), and EPA (Civil Action Nos. JFM-97-558 and JFM-97-559). The CD required BSC to undertake certain RCRA Corrective Action activities at the Facility, including, among other tasks, completing a Site Wide Investigation (SWI) and a Corrective Measures Study (CMS), and implementing Interim Measures (IMs) as necessary. At the time the CD was entered, EPA and MDE had identified eighty-one (81) solid waste management units (SWMUs) and twenty-eight (28) areas of concern (AOCs) at the Facility, and had designated five special study areas to focus on initially in the SWI, consisting of the Tin Mill Canal/Finishing Mills, Greys Landfill, Coke Point Landfill, Coke Oven Areas and Humphreys Impoundment. The CD did not require implementation of corrective measures, apart from IMs, several of which are currently in operation at the Facility.

After BSC declared bankruptcy in 2003, steelmaking continued at the Facility under a series of new owners, each of which also continued to carry out the work required under the CD. Steelmaking operations at the Facility ended in 2012, when then-owner, RG Steel Sparrows Point LLC, declared bankruptcy. In August, 2012 several companies, including Sparrows Point LLC (SPLLC), purchased the Facility from RG Steel Sparrows Point LLC through a bankruptcy sale. SPLLC subsequently acquired all of the property interests in the Facility. In July, 2014, the District Court entered an amendment to the CD adding SPLLC as a Respondent. Meanwhile, SPLLC had notified EPA and MDE of its interest in selling the Facility to Sparrows Point Terminal LLC (SPTLLC). In September, 2014, EPA and MDE entered into a Settlement Agreement (SA) that was subject to public comment, and an Administrative Order on Consent (ACO), respectively, with SPTLLC. The agreements, together, provide for the cleanup of the Facility under both RCRA Corrective Action and Maryland law. SPTLLC subsequently acquired the Facility, and following public comment and publication of EPA's response, the SA was finalized in November, 2014. In 2016 SPTLLC changed its name to Tradepoint Atlantic (Tradepoint). Tradepoint has organized the Facility into parcels for redevelopment as commercial, light industrial and logistics facilities.

B. Site Geology and Hydrogeology

The Facility is located within the Coastal Plain Physiographic Province, which is the relatively low-lying portion of the Atlantic Slope. The unconsolidated sediments beneath the Sparrows Point Peninsula lie horizontally on a bedrock surface of Precambrian and Early Paleozoic crystalline rock that slopes downward to the southeast. The unconsolidated sediments include (from youngest corresponding to surficial to oldest) recent fill deposits consisting primarily of iron- and steel-making slag; the Pleistocene Talbot Formation (predominantly clays, organic clays, silts, and muds) approximately five to 100 ft. thick; the Upper Cretaceous Patapsco Formation (predominantly sand and gravel interbedded with lenses of sandy clay) approximately 145 to 255 ft. thick; the Upper Cretaceous Arundel Formation (predominantly dense, plastic clays with nodules of iron oxide and a few discontinuous lenses of sand) approximately 20 to 180 ft. thick with an average thickness of 100 ft.; and the Lower Cretaceous Patuxent Formation (interbedded and lenticular beds of gravel, sand, sandy clay, and clay) approximately 50 to 250 ft. thick. The Cretaceous formations comprise the Potomac Group.

The aquifer system immediately underlying the Sparrow's Point Peninsula is called the Lower Patapsco Aquifer system. A deeper confined aquifer exists below the approximately 100 feet overlying Arundel Clay confining unit in the Patuxent Formation and is called the Patuxent aquifer system. Groundwater investigations at Sparrow's Point are conducted solely in the Lower Patapsco because there is no connection between the two aquifers.

Unconfined groundwater exists within the shallow aquifer comprised of the slag fill material, and intermediate and deeper aquifers exist within the Talbot and Patapsco Formations, respectively. The Lower Patapsco aquifers are hydraulically interconnected, but are partially separated in areas by discontinuous lenses of silt and clay. Radial flow on the western side of the peninsula is toward Bear Creek and the Patapsco River to the west. Flow on the south side of the peninsula is south toward the southern shoreline and turning basin. Flow on the east side of the peninsula is toward Old Road Bay to the east. Groundwater flow direction within the intermediate aquifer along the western portion of the Peninsula is northwest, influenced by historical pumping activities in the area near the shipyard to the west of the Peninsula. Groundwater flow direction within the intermediate aquifer along the eastern portion of the peninsula is south-southwest in the apparent direction of the natural gradient. Groundwater flow direction within the deep aquifer is unidirectional to the east-northeast.

III. Parcel Description

The TMC is a man-made swale that currently conveys stormwater runoff and groundwater base flow from an approximately 800-acre drainage area of the Facility. Waters

collected in the TMC are routed to the Humphrey's Creek Waste Water Treatment Plant (HCWWTP) for treatment prior to discharge via the NPDES permitted Outfall 014. The average volume of water flowing through the Canal to the HCWWTP ranges from approximately 3,000 gallons per minute (gpm) during dry weather to over 50,000 gpm during storm events. The TMC is located in the central portion of the Facility, south of Interstate 695 and Highway Route 158 (Figure 1).

The TMC is approximately 7,500 feet in length, 30 to 50 feet wide and 15 feet below grade. The Canal was constructed from slag and includes numerous point discharges from the Facility storm sewer system. The eastern portion of the TMC began operating in the early 1950's. The western (remaining) portions of the canal and HCWWTP began operating in approximately 1969. Since its construction, the TMC has historically also conveyed wastewater discharged from numerous manufacturing operations associated with former steelmaking and steel finishing operations at the Facility. Over the years, some of the heavier particles and oils in the wastewaters from the steel manufacturing operations have settled to the bottom of TMC. The materials are located throughout the entire length and width of the Canal and affect water currently being controlled and discharged through the Canal. The Canal still receives and controls stormwater runoff; the HCWWTP remains operational to treat stormwater runoff prior to discharge.

IV. Summary of Investigations

Sediment samples were collected from 16 transects along the length of the TMC and from one transect along a channel way from the Pori Lagoon area during two sampling events (April, 2015, October, 2016). In total, 58 discrete depth samples were collected and analyzed for specific 40 C.F.R. Part 264 Appendix IX volatile organic compounds (VOCs); Appendix IX RCRA metals including hexavalent chromium, and for Toxicity Characteristic Leaching Procedure (TCLP). Additionally, 29 composite samples were collected and analyzed for Appendix IX semi-volatile organic compounds (SVOCs), cyanide, polychlorinated biphenyl (PCB) aroclors, TCLP SVOCs, and TCLP inorganics. Finally, geotechnical sediment samples were collected at three specific transects and analyzed for moisture content and bulk density.

As a result of elevated PCB results from the initial sampling event an additional 42 discrete sediment samples were collected to delineate the extent of elevated PCB concentrations surrounding a single sample location (TM-SD-31). The samples were collected between two transects (5 and 7) from the top 12 inches and bottom 12 inches of the sediment horizon at 21 locations spaced 50 feet apart. The samples were collected from the center of the Canal. Additional samples were collected elsewhere from the TMC from additional locations to complete the delineation effort.

A. Sediment Characterization

Sediment analytical results were screened against Project Action Limits (PALs) established in the site-wide QAPP. PALs are generally based on the EPA's Regional Screening Levels (RSLs) for the Composite Worker exposure to soil. The Composite Worker is defined by

the EPA as a long-term receptor exposed during the work day who is a full-time employee that spends most of the workday conducting maintenance activities (which typically involve on-site exposures to surface soils) outdoors.

There was one VOC detection in excess of its applicable PAL. Benzene was detected in a single composite sample at a concentration of 18 mg/kg (PAL = 5.1 mg/kg). The remaining PAL exceedances in sediment consisted of three inorganics (arsenic, cobalt, and lead) and three SVOCs (benzo[a]pyrene, naphthalene, and 2,4-dinitrotoluene). Arsenic was the most common inorganic exceedance, and was detected above the PAL in 62 of the total sediment samples analyzed. The maximum detection of arsenic was 132 mg/kg (PAL = 3.0 mg/kg). Lead and cobalt were each limited to a single PAL exceedance, 946 mg/kg (PAL = 800 mg/kg) and 386 mg/kg (PAL = 350 mg/kg), respectively. Benzo[a]pyrene exceeded the PAL in the largest number of samples (three) of any SVOC. The maximum detection of benzo[a]pyrene was 10.3 mg/kg (PAL = 2.1 mg/kg) from a composite sample. Naphthalene and 2,4-dinitrotoluene were each limited to a single PAL exceedance, 137 mg/kg (PAL = 17 mg/kg) and 26.8 mg/kg (PAL = 7.4 mg/kg), respectively.

In the subsequent PCB Supplemental Investigation Aroclor 1248 and total PCBs were detected at concentrations greater than 50 mg/kg at three sample locations. All samples with detected concentrations of PCBs greater than 50 mg/kg were collected from deeper sampling intervals (below the surface). Delineation samples collected as part of the Supplemental Investigation identified that areas with PCB concentrations greater than 50 mg/kg were laterally limited to the area between sample locations TM-SD-118 and TM-SD-124, as well as the area in the immediate vicinity of the individual sample location TM-SD-31. Because samples with PCB concentrations over 50 mg/kg were from deep sampling depth intervals, further vertical delineation will be performed during a remedial phase.

B. Hazardous Waste Characterization

Based on the historical records, the sediment currently present in the TMC may have contacted and been contaminated with wastewater treatment sludges from electroplating operations, containing a listed hazardous waste (EPA Waste Code F006), prior to the installation of the HCWWTP plant in 1987. Sediments may have also been contaminated with spent pickle liquor, which was beneficially reused to adjust pH in the TMC, and is also a listed hazardous waste (K062) when disposed rather than reused. Under EPA's "contained-in" policy, sediment excavated from the TMC could be considered contaminated media and could be subject to regulation under RCRA if determined to "contain" hazardous waste.

EPA generally considers contaminated environmental media to contain hazardous waste: (1) when they exhibit a characteristic of hazardous waste; or, (2) when they are contaminated with concentrations of hazardous constituents from listed hazardous waste that are above health-based levels. If contaminated environmental media contain hazardous waste, they are subject to all applicable RCRA requirements until they no longer contain hazardous waste. EPA considers contaminated environmental media to no longer contain hazardous

waste: (1) when they no longer exhibit a characteristic of hazardous waste; and (2) when concentrations of hazardous constituents from listed hazardous wastes are below health-based levels.

In the case of environmental media that are contaminated by listed hazardous waste, EPA guidance recommends that "contained-in" determinations be made based on health-based levels of hazardous constituents below which contaminated environmental media would be considered to no longer contain hazardous waste. Since this determination involves development of site specific health-based levels, EPA or authorized state approval is required. MDE has been delegated the authority to make the determination of when the sediments no longer contain hazardous waste. MDE determined that for the TMC remediation waste to be considered to no longer contain hazardous waste, the characterization of the remediation waste must demonstrate that: (1) the waste no longer exhibits any characteristics of a hazardous waste; and (2) the concentrations of constituents are below the USEPA industrial soil Regional Screening Levels (RSLs) set to a hazard index of 10 and a cancer risk of $1x10^{-4}$ (Adjusted RSLs).

A representative number of samples of sediment from the TMC were analyzed using the TCLP method. TCLP testing was completed for regulated volatile, semi-volatile and metal constituents of discrete and composite sediment samples recovered from all transects. No exceedances of the TCLP regulatory limits were identified; therefore, demonstrating that the contaminated environmental media that may be excavated/dredged from the canal does not exhibit a hazardous characteristic.

A health-based assessment of hazardous constituents within the TMC sediments was completed by comparing the 1) maximum detected concentrations or the 2) maximum Method Detection Limits (MDLs) of the constituents of potential interest (COPIs) developed for the sediments to the Adjusted RSLs. The TMC sediments were analyzed for a broad list of COPIs including TAL inorganics, TCL volatile organics, TCL semi-volatile organics, and PCBs. The COPI list specifically included the underlying hazardous constituents for which the F006 waste was listed (cadmium, chromium, cyanide, lead, nickel and silver) and K062 (Hexavalent chromium and lead). Detection limits for some SVOCs exceeded the Adjusted RSLs as part of the initial characterization work. Additional samples were collected for analysis of SVOCs during the supplemental investigation at the locations where the MDLs exceed the Adjusted RSLs, using analytical methodologies employing lower detection limits. These supplemental SVOC results confirmed that the MDLs used during the original sampling event supported the health-based Adjusted RSL assessment. The assessment also reviewed concentrations of constituents expected to be found in the sediment after possible dewatering or other solidification of the excavated material prior to disposal.

PCB Aroclor 1242 in a single sample and Aroclor 1248 in another single sample were the only hazardous constituents found in sample results above the Adjusted RSLs. Therefore, based on the results of the TCLP analyses and the health-based "contained in determination" protocol, excavated environmental media and sediment from the TMC do not require management as a hazardous waste. However, some detections of PCBs did exceed the TSCA limitation of 50 mg/kg. Therefore excavated environmental media that contains PCBs with concentrations greater than 50 mg/kg will require management as a TSCA regulated waste material.

C. Risk Assessment

A Screening Level Risk Assessment (SLRA) was conducted for TMC sediments to further evaluate existing conditions to support the design of necessary response actions. The data were evaluated to assess baseline risk for the Composite Worker exposure scenario. The SLRA includes identification of contaminants of potential concern (COPCs), an area of exposure (EU), exposure point concentrations (EPC), and calculation of risk ratios. Lead was evaluated separately with the net result that all lead results equaling or exceeding 10,000 mg/kg would require delineation for possible excavation and removal. EPA determined that if the risk ratios for each noncarcinogenic COPC or cumulative target organ did not exceed 1 (excepting lead), and the sum of the risk ratios for the carcinogenic COPCs did not exceed a cumulative cancer risk of $1x10^{-5}$, then a no further action determination would be acceptable.

TMC sediments did not exceed an average lead value of 800 mg/kg. There were no locations where detections of lead exceeded 10,000 mg/kg, the designated threshold at which further delineation would be required.

Risk ratios for the estimates of potential EPCs for the Composite Worker scenario indicated that the cumulative carcinogenic risk for a Composite Worker exposed to sediment was $3x10^{-5}$. This level of risk exceeds the acceptable risk for no further action as defined above. When the non-cancer risks were segregated and summed by target organ for cumulative Hazard Index (HI), no target organ exceeded a cumulative HI of 1. The SLRA results indicate that a remedy controlling direct exposure to Composite Workers would be required to mitigate any potential future exposures to TMC sediments.

V. Corrective Action Objectives

EPA's Corrective Action Objectives for the specific environmental media at the TMC are as follows:

1. Sediments

EPA's Corrective Action Objective for the sediments at the TMC is to prevent direct human contact with hazardous constituents remaining in the sediment that have been detected above risk ratios or that contain more than 50 mg/kg of total PCBs, in conformance with TSCA.

2. Groundwater

While Facility-wide groundwater continues to be evaluated site-wide under the Corrective Action Program, EPA proposes to prevent exposure to potential hazardous constituents in groundwater.

VI. Proposed Remedy

A. Sediments

EPA's Proposed Remedy for sediments at the TMC consists of excavation and then capping and implementation of institutional controls, as described below.

(1) Excavation

Accumulated sediments found higher than the historical base-grade will be removed and disposed of as described below, as will sediments or contaminated media below the historic grade that contain total PCB concentrations greater than 50 mg/kg and/or hazardous constituents at concentrations above risk ratios. Several sediment samples contained concentrations of PCBs that exceed 50 mg/kg and therefore, warrant delineation and excavation. Excavated environmental media in which the Total PCB concentration exceeds the 50 mg/kg threshold established by TSCA will require disposal as PCB remediation waste at a RCRA Sec. 3004 or 3006 permitted hazardous waste landfill or an approved PCB disposal facility [40 CFR §761 .61(a)(5)(i)(B)(2)(iii)]. Other excavated environmental media containing hazardous constituents at concentrations above risk ratios will be disposed at the on-site Greys Landfill. Greys Landfill is a non-hazardous, industrial landfill that has received process waste and demolition debris from throughout the former mill and is operated under the oversight of MDE.

(2) Capping

Sediments or contaminated media that do not require excavation may be left in place if paved or otherwise capped. Following sediment excavation throughout the TMC, all such residual sediments and fill materials will be covered with a 2-foot thick (minimum) cap to prevent direct human contact exposure risks, and will also provide a non-erosive canal lining that will facilitate future stormwater conveyance. Additional slag fill will be placed in the PCB-contaminated sediment removal area as necessary to achieve the desired subgrade elevations prior to cap placement. The cap will consist of a geotextile filter fabric overlain by slag fines and coarse slag up to the final canal grade. The coarse slag will be similar to conventional rip-

rap lining, and will be sized in accordance with applicable procedures for erosion and sediment control to prevent scour and provide an erosion resistant surface based on the anticipated maximum flow velocities and shear stresses associated with projected flow rates in the Canal.

(3) Institutional Controls

EPA's proposed remedy for sediments remaining in the TMC includes the following use restrictions and requirements to be implemented through institutional controls (ICs):

- Parcel B16 shall be used for the singular purpose of conveying stormwater;
- The then-current owner shall maintain the integrity of all caps and covers by conducting regular periodic inspections (no less frequently than [yearly]), making timely repairs if needed, and maintaining a record of such inspection and maintenance;
- Any earth moving activities including excavation, grading, and/or utility construction, shall be conducted in compliance with an MDE-approved Soil Management Plan such that the activity will not pose a threat to human health and the environment or adversely affect or interfere with the use of the TMC as stormwater conveyance;
- A site-specific health and Safety Plan shall be submitted to MDE and EPA for approval prior to any earth moving activities to protect construction workers from engaging in activities that could expose them to contaminants remaining in sediments; and
- The then-current owner shall allow EPA, MDE and their authorized agents and representatives, access to inspect and evaluate the continued effectiveness of the caps and covers, and, if necessary, to ensure completion of any additional remediation necessary to ensure the protection of public health and safety and the environment.

B. Groundwater

Because contaminants remain in the groundwater at the Facility above levels appropriate for residential use, while Facility-wide groundwater is being investigated further, EPA is proposing to prohibit the potable use of groundwater to prevent human exposure to those contaminants in the short-term. The groundwater use restriction will be implemented through enforceable ICs in conjunction with the land use restriction described above.

C. Implementation

Once EPA selects the Final Remedy for the TMC, the components of the Final Remedy will be incorporated into and become enforceable under Paragraph 72 of the SA. In addition, if not previously submitted, within sixty (60) days of the issuance of the Final Remedy, TPA is

required to submit to EPA for approval a Corrective Measures Implementation Workplan ("CMI Workplan") for implementation of the corrective measures selected in the Final Remedy, in accordance with Paragraph 72 of the SA. EPA anticipates that the use restrictions necessary to prevent human exposure to contaminants remaining in soils at the TMC will be implemented through an enforceable environmental covenant, filed with the Baltimore County Land Records Office or other appropriate office. If EPA determines that additional maintenance and monitoring activities, use restrictions, or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable instrument, provided any necessary public participation requirements are met.

VII. Evaluation of EPA's Proposed Remedy

A. Threshold Criteria

1. Protect Human Health and the Environment

The Proposed Remedy will protect human health from exposure, including future exposure, to sediment and groundwater contamination. The Proposed Remedy will require that the owner remove sediments with total PCB concentrations greater than 50 mg/kg and cap the remaining sediment. In addition, EPA's Proposed Remedy requires land and groundwater use restrictions that will prohibit future uses that would pose an unacceptable risk.

2. Achieve Media Cleanup Objectives

EPA's Proposed Remedy meets the cleanup objectives appropriate for the current and reasonably anticipated future land use. The Proposed Remedy does not include cleanup of groundwater, which will instead be addressed separately by a Facility-wide groundwater remedy developed for the entire 3,100-acre Facility. In the short-term, the Proposed Remedy will prohibit potable use of groundwater at Parcel B16.

3. Remediating the Source of Releases

Historical sources of contamination to the TMC have been eliminated already through the decommissioning and removal of the former steel production operations. The Proposed Remedy will require the proper removal and disposal of contaminated sediments that exceed applicable levels, thereby removing the source of contaminants from the TMC and reducing the potential for contaminants to migrate.

B. Balancing/Evaluation Criteria

1. Long-Term Effectiveness

The Proposed Remedy will provide long-term effectiveness in protecting human health and the environment by removal and secure disposal of contaminated sediments and controlling exposure to contaminants remaining in sediment through the placement of an erosion-resistant and stable cap. Land use restrictions will prohibit use of the TMC in any way that would result in exposure to contaminated sediments. The Proposed Remedy requires compliance with an MDE-approved Soil Management Plan to control exposure to and spread of contaminated soil during excavation activities. Additionally, the ICs will impose a requirement that the owner inspect the engineering cover no less than annually, and to make repairs as necessary.

2. Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents

The Proposed Remedy provides immediate reduction in contaminant toxicity, mobility and volume through the treatment of liquids from PCB-contaminated areas. The mobility and volume of contaminated sediments throughout the canal will be significantly reduced through excavation and secure containment of sediments, and the placement of a non-erosive cap above residual sediments.

3. Short-Term Effectiveness

In the short-term the Proposed Remedy presents a slight increased risk from direct contact exposure to contaminated sediments and liquids in association with excavation, drying, loading and transport, but the risks can be controlled through implementation of conventional best management practices for waste handling, dust control, and worker health and safety.

4. Implementability

The Proposed Remedy is readily implementable as it can be completed in a reasonable timeframe, in a manner consistent with applicable permit requirements and regulations, the technologies are feasible and well proven, and the required services and materials are readily available.

5. Cost

Implementation of the Proposed Remedy will cost several hundred thousand dollars for sediment excavation, handling, transportation, disposal and capping. Long-term the Proposed Remedy costs will be relatively low for long-term maintenance and inspection. Overall this remedy is a cost-effective approach for addressing identified media cleanup objectives.

6. Community Acceptance

EPA will provide public comment opportunity on the Proposed Remedy for the TMC to evaluate community acceptance and document the Final Remedy in the Final Decision.

7. State/Support Agency Acceptance

MDE and EPA have jointly conducted this investigation. The Proposed Remedy is consistent with applicable MDE permitting requirements and addresses the applicable requirements of the MDE Voluntary Cleanup Program.

VIII. Financial Assurance

The ACO requires Tradepoint to establish and maintain financial assurance for completion of work in accordance with Section XIII (Financial Assurance) of the ACO. Tradepoint has provided MDE a copy of the Trust Agreement and documentation that the Trust has been initially funded with $43 million, in addition to a $5 million letter of credit. This financial assurance, for which MDE is the custodian, will also satisfy EPA's financial assurance requirements for this Proposed Remedy.

IX. Public Participation

Before EPA selects a Final Remedy for the TMC, the public may participate in the remedy selection process by reviewing this SB and documents contained in the Administrative Record (AR). The AR contains all information considered by EPA in reaching this proposed decision and is available for public review during office hours at two locations:

Barbara Brown
Land Management Administration
Maryland Department of the Environment
1800 Washington Boulevard Baltimore, Maryland 21230
(410) 537-3493

Or

Erich Weissbart
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
weissbart.erich@epa.gov
(410) 305-2779

Interested parties are encouraged to review the AR and comment on EPA's Proposed Remedy. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to

Erich Weissbart, EPA project manager. EPA may hold a public meeting to discuss this Proposed Remedy upon request, which should also be made to Erich Weissbart whose contact information is listed above.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the Proposed Remedy, EPA will modify the Proposed Remedy or select other alternatives based on such new information and/or public comments. EPA will announce its Final Remedy and explain the rationale for any changes in the Final Decision. All persons who comment on this Proposed Remedy will receive a copy of the Final Decision. Others may obtain a copy by contacting Erich Weissbart at the address listed above.

Signature: Date:

Catherine A. Libertz

7-25-17

Catherine A. Libertz, Acting Director
Land and Chemicals Division
USEPA, Region III

Attachment 1

Administrative Record List

1. Tin Mill Canal Remediation Waste Determination, February 4, 2016
2. Sediment Characterization Report for the Tin Mill Canal, Sparrows Point Terminal, Maryland, Revision 1, June 14, 2017.
3. Maintenance Cleanup Plan for the Tin Mill Canal, Tradepoint Atlantic Sparrows Point, MD, Revision 0, May 5, 2017.
4. Corrective Measures Study – Tin Mill Canal, Tradepoint Atlantic Sparrows Point, MD, Revision 0, June 16, 2017.
5. Quality Assurance Project Plan, Sparrow's Point Terminal Site, Sparrow's Point, Maryland. Enviroanalytics. Revision 3, April 5, 2016.

Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation

ARM Group Inc.

0 375 750 1,500 Feet

- Site Boundary
- Private Property
- Area A Boundaries
- Area B Boundaries

Tradepoint Atlantic
Area A and Area B Parcels
August 1, 2016

EnviroAnalytics Group	Tradepoint Atlantic
Area A: Project 150298M Area B: Project 150300M	Baltimore County, MD

Figure 1

ATTACHMENT B

PUBLIC COMMENTS

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

BLUE WATER BALTIMORE

August 25, 2017

VIA ELECTRONIC MAIL ONLY

Mr. Erich Weissbart
Project Manager
U.S Environmental Protection Agency – Region 3
1650 Arch St.
Philadelphia, PA 19103
(Email: weissbart.erich@epa.gov)

RE: Sparrows Point Facility: Statement of Basis For Proposed Remedy For Parcel B16, Tin Mill Canal (July 2017)
Comments of the Chesapeake Bay Foundation and Blue Water Baltimore

Dear Mr. Weissbart:

These comments are submitted by Blue Water Baltimore (BWB) and the Chesapeake Bay Foundation (CBF) and address EPA's Statement of Basis for Parcel B16, Tin Mill Canal, at the Sparrows Point former steelmaking facility currently owned and managed by Tradepoint Atlantic, LLC (TPA). As you know, both of our organizations have had a strong interest in this site going back for many years, due to the risks posed to human health and the environment from nearly a century of steelmaking and related processes which were carried out at this site on a very large scale. These industrial processes generated enormous quantities of hazardous waste, resulting in widespread contamination of soils and groundwater which remains present at the site today.

Our objective is to ensure that the Site, and the various facilities or units[1] located on it, including Tin Mill Canal, are properly closed and that, before any redevelopment and reuse is commenced, all legally required and appropriate safeguards are put in place to prevent any exposure of human or animal receptors or the environment to hazardous wastes or constituents that remain at the Site. We have previously provided you with descriptions of CBF and BWB and our interests in Sparrows Point (*see, e.g.*, our comment letter of March 10, 2017, on EPA's Statement of Basis for Parcel A-1 and

[1] In this comment letter, "Site" refers to the entire Sparrows Point tract consisting of some 2,300 acres, and "Unit" or "Facility" refers to a specific location where a particular operation or activity took place, or where waste was managed, such as the Tin Mill Canal. This is to avoid confusion because the RCRA regulations use the term "facility and "unit" interchangeably to refer to a specific waste management location or operation.

Subparcel B4-1) so we will not repeat that here. This Site has a long history of non-compliance and an equally long history of agency inaction. We have been monitoring developments there since its ownership by Bethlehem Steel. Our members want to see this site brought into full compliance with federal and State law and all contamination appropriately remediated. As explained below, there is ample evidence that Tin Mill Canal is a former hazardous waste surface impoundment which has never been properly closed under RCRA. Any corrective action, remedial measures, or redevelopment at this Facility must include all of the closure and post-closure care measures required by RCRA, and may not be deferred to a subsequent Site-wide groundwater protection plan.

A. Tin Mill Canal's Operation as a Hazardous Waste Surface Impoundment Has Been Long Recognized by EPA and MDE

Tin Mill Canal is not merely "a man-made swale that currently conveys stormwater runoff and groundwater base flow from an approximately 800-acre drainage area of the Facility" as stated in the Statement of Basis at page 4. Historic records in files maintained by EPA and MDE for Sparrows Point make it absolutely clear that both listed and characteristic hazardous wastes were disposed of into the Tin Mill Canal (TMC), which thereby became a hazardous waste storage surface impoundment. 42 U.S.C. § 6903(3); 40 CFR § 260.10. This is clearly reflected in documents submitted by Bethlehem Steel Company during the 1980s, including its notices of hazardous waste activity and permit applications, and by numerous EPA inspection reports.

In its Statement of Basis (SoB), EPA barely acknowledges this longstanding history of improper operation as an unlined hazardous waste surface impoundment without the required RCRA permit. On page 6 the SoB states: "Based on the historical records, the sediment currently present in the TMC *may* have contacted and been contaminated with wastewater treatment sludges from electroplating operations, containing a listed hazardous waste (EPA Waste Code F006)…[and] also been contaminated with spent pickle liquor…a listed hazardous waste (K062)." (emphasis added). There is no question that hazardous wastes were disposed of in TMC. Voluminous records in EPA's files document years of disposal of RCRA listed hazardous wastes in the TMC, including not only F006 and K062, but also F007, F008 and K060.

Attached as Exhibit A is a letter from Hedy Alavi of MDE to John Humphries, Chief of the Permit Section with EPA Region 3 dated April 20, 1993, attaching a 6 page memorandum describing locations at Sparrows Point where hazardous waste was being managed or disposed, and referring to Bethlehem Steel's 1980 RCRA Permit Part A application (the "1993 Memo"). Regarding the TMC the memorandum states in pertinent part:

> The Tin Mill Canal (TMC) is a 7,700 foot long, 80 foot wide, 15 foot deep unlined *surface impoundment* situated in the former stream bed of Humphrey's Creek. (p.1).

> Progressing in a westerly direction, the canal receives discharges from five "tenant companies" on the BSC property, then from 23 outfalls from the steel mill process of the BSC facility prior to it entering the HCWWTP for treatment and discharge operations via outfall 14 to Bear Creek near its confluence with the Patapsco River.
>
> In addition to industrial cooling waters and other industrial wastewaters, the Tin Mill Canal *receives listed* (K062; waste pickle liquor, F007; cyanide electroplating bath solution, F008; electroplating bath sludge) and characteristic (D002; corrosives, D007; chrome waste solutions) *hazardous waste*.
>
> *The failure of BSC to notify EPA that the Tin Mill Canal is a hazardous waste management unit, apply for a permit, and to comply with the technical and procedural requirements of RCRA is a major violation of the law.*" (p.2). (emphasis added)

On page 3 the 1993 Memo notes that reports submitted by BSC in March, 1985, identified listed and characteristic wastes being disposed of to TMC, and that EPA's Office of Regional Counsel concluded that these hazardous wastes were being "treated, stored or disposed in the canal", and that the TMC was a "surface impoundment" which could only be operated in compliance with RCRA though interim status or a permit, neither of which BSC had. On page 5 the 1993 Memo concluded that BSC "is in violation of RCRA for operating a hazardous waste management unit without a permit." Other listed wastes were also discharged to the TMC, including F006, wastewater treatment sludges from electroplating operations; and K060, ammonia still lime sludge. The disposed hazardous waste remains in the TMC, and its operation without a permit has been allowed, inexplicably, to continue ever since.

Attached as Exhibit B is an attachment to an EPA memo documenting the results of a 1987 inspection entitled "Exhibit A: Hazardous Wastes Which Have Been Discharged to the Tin Mill Canal." This document identifies 36 distinct industrial process wastewater streams which were discharging listed or characteristic hazardous wastes to TMC. These are just two examples of dozens of similar memoranda in EPA's and MDE's files documenting discharges of hazardous waste to the TMC over decades, all without the protections required by a RCRA permit which Bethlehem Steel should have obtained, but failed to do so.

These discharges have been described, among other places, in the Sparrows Point RCRA Facility Assessment (PRC, September 30, 1987), the Final RCRA Facility Assessment Report (A.T. Kearney, August 12, 1993) and the "Description of Current Conditions, Bethlehem Steel Corporation, Sparrows Point, Maryland" by Rust Environment and Infrastructure (January 1998) (the "RUST" report). These findings have been exhaustively detailed in the Expert Report prepared by Richard C. Fortuna, a RCRA expert (April 16, 2012) for use in our citizen suit against a prior owner of the site, Severstal, which was effectively halted by the stay resulting from the bankruptcy of the

then-owner, R.G.Steel, on May 31, 2012 (*see* pp. 5-7 and 13-25). A copy of this report is attached as Exhibit C. Mr. Fortuna's report outlines the requirements of RCRA which apply to the TMC, and discusses the benefits and protections which result from RCRA remediation and/or closure (*see* Ex. C pp. 25 and 40-48, discussed further below). We believe we previously sent you the three expert reports from that case, but are attaching them to this letter for convenience and so they become part of the Administrative Record.

B. EPA's RCRA Regulations Require That When a Hazardous Waste Storage Or Disposal Facility, Including an Unlined Surface Impoundment, Is Closed The Facility Must Establish and Implement a Groundwater Monitoring, Detection and Corrective Action Program.

When an unlined surface impoundment is closed, it can either be "clean closed", by which all hazardous waste is removed, or given a permit under RCRA which must incorporate all applicable requirements of 40 CFR Part 264. (See the permitting requirements at 40 CFR § 270.14 and -.17). These requirements include 40 CFR Part 264, Subpart G "Closure and Post-Closure", and 40 § CFR 264.228 (additional requirements for surface impoundments). "Clean closure" is not practical here because of the magnitude and extent of the volume of contaminated sediments and groundwater in the TMC. Thus, the closure permit is the prescribed mechanism.

The main objectives of post-closure care are to protect human health and the environment, prevent or minimize the escape of hazardous wastes or constituents, and provide for monitoring, detection and corrective action plans to detect and remediate any releases. There must be regular inspection and maintenance.

The "closure and post-closure care" regulations in Subpart G (40 CFR § 264.110 through 264.120) require closure and post-closure care plans for any hazardous waste management facility. While the requirements are detailed, the ones most pertinent to this matter are the requirements that both the closure and post-closure plan ensure that the facility complies with the groundwater monitoring and protection provisions of Subpart F, which is 40 CFR Sections 264.90 – 264.101. (See 40 §§ CFR 264.112(a) for the closure plan and 264.118(b) for the post-closure care plan).

An alternative to a post-closure permit is allowed by 40 § CFR 270.1(c)(7) in the form of an "enforceable document" for post-closure care "imposing the requirements of 40 CFR § 265.121." That section requires compliance with, among other things, "The requirements for facility-wide corrective action in Sec. 264.101" and "The requirements of 40 CFR §§ 264.91 through 264.100." These provisions are relevant because EPA has stated that it intends to use the "enforceable document" option for the post-closure care of the TMC (*See* SoB at p. 11, referring to an "enforceable instrument" and correspondence from EPA discussed below).

The elements of 40 CFR §§ 264.90 – 264.101 which must be included in an "enforceable document" are:

- A "monitoring and response program" which includes monitoring, detection and, if relevant concentration levels of hazardous constituents are detected, corrective action. 264.91.

- Establishment of a "groundwater protection standard" which sets risk-based maximum concentrations of hazardous constituents which must be monitored for and which may not be exceeded at the "point of compliance" in the upper-most aquifer beneath the facility. 264.92 and 264.95

- Specification of the hazardous constituents which must be monitored for, based on the contents of the facility – in this case the TMC. 264.93

- Concentration limits not to be exceeded, based on EPA specifications and a facility-specific risk assessment. 264.94

- A point of compliance downgradient from the facility. 264.95

- A compliance period, which includes the post-closure care period and is extended following any corrective action until 3 consecutive years of compliance with the groundwater protection standard is demonstrated. 264.96

- Installation of a sufficient number of groundwater monitoring wells upgradient of the facility (to demonstrate "background" concentrations of constituents) and downgradient so as to detect possible migration of constituents from the facility; the wells must meet specified quality requirements, and the monitoring frequency must be specified. 264.97

- A detection monitoring program which includes measures for determining when there is statistically significant evidence of a release of any hazardous constituent for which monitoring is being conducted, provision of notice of this to EPA, and the triggering of enhanced monitoring to determine whether the maximum concentration at the compliance point for any constituent has been exceeded. 264.98

- A "compliance monitoring program" designed to ascertain whether there has been release of a hazardous constituent from the facility. 264.99

- A corrective action program designed to prevent further releases or migration of hazardous constituents which exceed the groundwater protection standard established under 264.92. 264.100 and 264.101

- This Post-closure care program must continue for 30 years. 264.90(c)(2), incorporating by reference 264.117.

The current SoB, in violation of federal regulation, does not contain these provisions. EPA has not provided any explanation for its decision to exclude these legal requirements.

C. The Detailed Facility-Specific Post-Closure Care Requirements Applicable to the TMC Must be Prescribed and Implemented in a Permit or Enforceable Document Specifically Tailored to the TMC, Not in a Site-Wide Groundwater Monitoring Program.

The detailed requirements for closure and post-closure care of an unlined hazardous waste surface impoundment must by their terms be designed for that facility and implemented at that facility. The SoB makes no provision for addressing the serious groundwater contamination threat posed by the TMC, which is over a mile long. Instead, it says that it will be managed to prevent exposure to potential hazardous constituents in groundwater through the use of Institutional Controls prohibiting its potable use. There is no possible way post-closure requirements can be designed or implemented consistent with the regulations described above through a site-wide groundwater monitoring program covering some 2,300 acres or more.

The groundwater connection to TMC is stated in the SoB and has otherwise been well documented. The SoB states in the Parcel Description that TMC conveys both stormwater runoff and groundwater base flow from a large portion of the Site. It goes on to state that the average dry weather volume of water flowing through TMC to the Humphrey Creek Waste Water Treatment Plant is 3,000 gallons per minute. SoB at pg. 5. Our understanding is that groundwater constitutes most if not all of this volume.

Experts retained by CBF and BWB have identified the hydrological connection between TMC and contaminated groundwater beneath the Site. The report prepared by Steven P. Larson with S.S. Papadopulos & Associates, one of the leading experts on groundwater hydrology in the country, reflects a careful study of the groundwater monitoring data in the vicinity of the TMC and Grey's Landfill (copy attached as Exhibit D, dated April 16, 2012). In the report, he demonstrates using EPA approved monitoring data that there is a hydrologic connection between the TMC and the groundwater, and that contaminated groundwater was at that time flowing from both the TMC and Grey's Landfill towards Bear Creek. These contaminants include VOCs, PAHs, SVOCs, CHCs and metals. (Ex. D pp. 3-5)

Mr. Larson's report suggests the need for additional groundwater monitoring to the north of these units, and between them and Bear Creek, to better define the pathways of contamination. Of course, any remedial measures should cut off these pathways, and the post-closure program must include appropriate monitoring and corrective action.

Richard Fortuna also points out in his report that a RCRA post-closure care plan would incorporate the groundwater detection and protection measures required under 40 CFR Subpart F – "Releases from Solid Waste Management Units" (compliance required

under Subpart G) in a document which is clear and easily complied with and enforced. (Ex. C at p. 25).

Finally, the expert report by Brad Martin, Jim Ashworth and Cathy Dare of AlterEcho (April 16, 2012), experts in hazardous waste management, provides further well-grounded recommendations regarding groundwater monitoring at the TMC (page 7). A copy of that report is attached as Exhibit E.

Because EPA's SoB fails to address possible releases of contaminated groundwater from the TMC on a parcel or Facility-specific basis, and fails to comply with the RCRA requirements for closure and post-closure care, it must not be finalized. It must be withdrawn and replaced with a new SoB and Work Plan which include compliance with the RCRA requirements for groundwater protection.

D. Prior Correspondence With EPA and MDE Indicated that the Agencies Agreed that Closure and Post-Closure Care of the TMC would be done In a Facility-specific Fashion, Using an "Enforceable Document."

EPA and MDE have repeatedly said, on the record, that the agencies would require compliance with RCRA in accordance with what we outline above. *See, e.g.*, Ridge Hall's email to Luis Pizarro et al (April 9, 2015) (attached as Exhibit F), Ridge Hall's letter to Andrew Fan, Luis Pizarro and Barbara Brown (May 25, 2016) (attached as Exhibit G), and Luis Pizarro's reply to that letter (August 18, 2016) (attached as Exhibit H). In his August 18 letter, Mr. Pizarro stated in pertinent part:

> In your May Letter, you assert that both Tin Mill Canal (TMC) and Grey's Landfill received RCRA listed hazardous wastes during steelmaking operations, and, therefore, the remedial activities conducted at those areas must be conducted in compliance with the closure and post-closure requirements of 40 C.F.R. Part 264. You further assert that closure and post-closure care is necessary to protect human health and the environment from the adverse effects caused by releases of hazardous wastes from those areas.
>
> EPA agrees that a RCRA-compliant remedy is required at both TMC and Grey's Landfill.

(Ex. H, p.1)

That letter also advised that EPA might do this through an "enforceable document in accord with 42 [sic; should be 40] Sec. 265.121, and will assure a RCRA Corrective Action remediation will be completed at the SPF." This would "...satisf[y] all the substantive goals of Part 264..." (Ex. H, p.2).

See also Ridge Hall's reply email of August 25, 2016 (attached as Exhibit I), stating: "We agree that the RCRA requirements for closure and post-closure care at these areas [TMC and Grey's Landfill] can be handled either through a permit or an 'enforceable document' which complies with 40 CFR 265.121....*See also* 40 CFR 270.1(c)(7)."; Luis

Pizarro's email reply (Sept. 23, 2016) (attached as Exhibit J) and Ridge Hall's email reply (Sept. 26, 2016) (attached as Exhibit K). Mr. Pizarro's September 23 email took the position that the 2014 Settlement Agreement between EPA and TPA could constitute an "enforceable document in accord with 40 CFR 265.121" (Ex. J at p. 1). Our position was that the Settlement Agreement lacks the necessary specificity, including provisions requiring that the facility comply with all the applicable RCRA requirements for closure and post-closure care, including those at 40 CFR 264.91-264.101 and described above, as required by 40 § CFR 265.121. Mr. Pizarro's email of Sept. 23 expressed the view that these requirements could be satisfied through the facility-specific "Work Plan and Statement of Basis", both of which would be made available for public review and comment. (Ex. J at p. 1)

We were therefore surprised and disappointed that the SoB contains no provisions for controlling contaminated groundwater at the TMC and, specifically, compliance with the RCRA closure and post-closure care requirements.

E. The Remedial Measures Proposed in the Statement of Basis Lack Adequate Technical Support and Would Not Provide The Necessary Protections for Human Health and the Environment.

The proposed remedy in the Statement of Basis is premised entirely on the notion that the contaminated sediments in the TMC are contaminated environmental media that contain hazardous waste and should be handled according to EPA's guidance applicable to remediation waste. Notwithstanding our continuing objection to this characterization and approach to TMC as stated above, we have further concerns about the remedy as proposed.

First, there is no evidence to support the remediation waste determination in the record other than an unsupported statement in an email dated February 4, 2016 from MDE attached as appendix A to the June 14, 2017 Sediment Characterization Report for Tin Mill Canal. There is no supporting this determination, it should be provided to the public and made part of the Administrative Record supporting the SoB for the proposed remedy.

Second, there is no clear determination by EPA or MDE, that the sediment collection plan resulted in a representative sample. The QAPP included in the Administrative Record contains standard operating procedures that require representative sampling in obtaining various samples from sediment, soil, and groundwater. A Sampling and Analysis Plan dated February 17, 2015 was submitted by EnviroAnalytics Group to EPA and MDE for approval, but neither that plan, nor any of the reports or studies contained in the Administrative Record state what protocol was followed or what statistical analysis was applied to assure an adequately representative sample of contaminated sediments in TMC.

Finally, the proposed remedy for the contaminated sediment and TMC itself causes us concerns. We agree with the requirement that any PCB contaminated

sediments exceeding 50 mg/kg be transported and disposed of at a TSCA regulated PCB disposal facility, but the disposal into Greys Landfill of excavated environmental media containing hazardous constituents at concentrations above risk ratios is inappropriate. Grey's Landfill is an unlined industrial landfill. As the attached expert reports state, there is a clear hydrologic connection between Grey's Landfill and Bear Creek. Any excavated sediments or contaminated environmental media should be disposed off-site at a RCRA regulated disposal facility.

We also assert that the proposed remedy of capping the bottom of TMC does not address the continuing inflow of contaminated groundwater to the canal along its bank. If the purpose of TMC in the future is to solely provide for the conveyance of stormwater as stated on page 10 of the SoB, then measures must be taken to prevent further inflow of groundwater to the canal. As part of the groundwater measures we propose above, TMC should be fully lined with an impervious barrier.

F. Conclusion

Tin Mill Canal was allowed to operate for decades in violation of RCRA's requirement that the owners and operators of the facility have a RCRA Permit and comply with its substantive requirements. This violation was well known to, and documented by, EPA and MDE inspectors and supervisory personnel. Administrative Compliance Orders were issued to the company to no avail and a judicially approved Consent Decree was not complied with. We understand that steelmaking at Sparrows Point was an economic engine for the State and the largest employer in the Baltimore region, and that during the last years of its operations Bethlehem Steel was in financial hardship before declaring bankruptcy. However, the conditions are now ripe for the contamination at TMC to be properly and thoroughly addressed.

If ever there was any justification for EPA's and MDE's failure to enforce compliance with RCRA at Sparrows Point due to the financial distress of the owner, that reason no longer exists. The current owner is solvent and has established a trust fund and letter of credit totaling $48 million as financial assurance to ensure that facilities like TMC are properly closed and given the post-closure groundwater monitoring and protection program required by RCRA. The current owner has also indicated many times its desire to take measures to redevelop the property according to environmental standards consistent with an industrial use with the goal of creating a new and vital economic center for the region. The TMC has been allowed for over 30 years to operate in violation – even today it has still never received the required closure and post-closure care. There is no longer any excuse to allow this violation to continue.

We certainly appreciate this opportunity to provide comments, and would be happy to discuss any aspect of them with you. As stated above, we also understand, based on prior correspondence from EPA, that the Corrective Measures Implementation Work Plan will also be made available for public review and comment (*see* Ex. H, page 2, and Ex. J, page 1). That document is critical for CBF and BWB, as well as other

members of the public, to better and more completely understand the remedial measures proposed under the Statement of Basis.

Respectfully submitted,

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ATTACHMENT C

RESPONSE TO COMMENTS

ATTACHMENT C (TMC)

EPA Response to Comments

The following summarizes the questions and comments submitted by the Chesapeake Bay Foundation and Blue Water Baltimore (CBF/BWB) in their letter dated August 25, 2017, which included 11 exhibits (Cmnt. Ltr.), regarding the Statement of Basis (SB) for the Tin Mill Canal (TMC) which is further described as Parcel B16 of the Sparrows Point Facility (SPF or Facility) located in Baltimore, Maryland. The Cmnt. Ltr. can be found in its entirety in the Administrative Record for SPF and is attached to the FDRTC as Attachment B.

CBF/BWB's Introduction

After setting forth the history of its interest and involvement with SPF, CBF/BWB assert that there has been a "long history of agency inaction" at the Facility. The Environmental Protection Agency (EPA) respectfully disagrees, noting that since at least the early 1990s both EPA and the Maryland Department of the Environment (MDE) have undertaken numerous measures to investigate and clean up the historic contamination from over 100 years of steelmaking at the SPF. These measures are summarized in the 1997 federal Consent Decree (CD) entered into under Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), among other authorities, by Bethlehem Steel Corporation (BSC), MDE, and EPA (Civil Action Nos. JFM-97-558 and JFM-97-559) and a 2014 Settlement Agreement and Covenant Not to Sue Sparrows Point Terminal, LLC (SA) (Docket # CERLCA/RCRA-03-2014-0279PP) entered into by Sparrows Point Terminal LLC, MDE and EPA, and numerous other publicly available documents. *See* https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-sparrows-point-llc-sparrows-point-md, http://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Pages/sparrowspt.aspx.

CBF/BWB generally do not challenge EPA's technical conclusions about the current contamination at the TMC, nor (with certain exceptions discussed below) its proposed measures to address that contamination. Moreover, EPA agrees with CBF/BWB's assertion that various listed RCRA hazardous wastes were discharged into the TMC, and that the TMC "has never been properly closed under RCRA . . . ." Where EPA and CBF/BWB disagree is on the particular legal requirements under which those measures are to be undertaken, and their timing. In particular, CBF/BWB assert that "[a]ny corrective action, remedial measures, or redevelopment at this Facility must include all of the closure and post-closure care measures required by RCRA, and may not be deferred to a subsequent Site-wide groundwater protection plan." Cmnt. Ltr., p. 2. With this statement, CBF/BWB introduce their two primary objections to EPA's proposed remedy for the TMC sediments.

First, CBF/BWB object that EPA did not include every element of post closure care requirements, particularly related to groundwater monitoring and remediation in the proposed remedy as described in the TMC SB. As provided by 40 CFR 265.110(d) and 40 CFR 265.111 and discussed in *Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities; Post-Closure Permit Requirements; Closure Process*, 63 F.R. 56710 (Vol. 63, No. 204, Oct. 22, 1998), EPA is not required to impose unit-specific

requirements of Part 264 or Part 265 at Facilities, such as the SPF, that have both hazardous waste management units (HWMUs) and other solid waste management units (SWMUs), but may use a more holistic remediation approach that addresses a facility as a whole.

Second, CBF/BWB object to EPA's decision to address Facility-wide groundwater, including groundwater at TMC, in a separate SB once the groundwater at the entire Facility has been evaluated under the Corrective Action Program. However, EPA's decision to do so is consistent with EPA policy. In implementing the Corrective Action Program, EPA may develop separate remedies to address different areas or media of a facility. This approach is often useful at facilities, such as SPF, that consist of areas and media that present distinct environmental concerns. *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities*, 68 FR 8757, 8762 (Feb. 25, 2003). At SPF, EPA has determined that it has sufficient data to propose a remedy for sediments at TMC, and therefore, to move forward with that remedy proposal, rather than delaying it while Facility-wide groundwater investigation is completed.

"A. Tin Mill Canal's Operation as a Hazardous Waste Surface Impoundment Has Been Long Recognized by EPA and MDE"

EPA agrees with much of CBF/BWB's discussion of the factual history of the disposal activities associated with the TMC. While CBF/BWB claim that "EPA barely acknowledges this longstanding history of improper operation as an unlined hazardous waste surface impoundment without the required RCRA permit," (Cmnt. Ltr., p. 2) EPA disagrees and notes that it has in fact set forth this very history in numerous documents addressing the SPF as a whole, including the CD and the SA, as well as providing a brief summary in the SB. In fact CBF/BWB's extended discussion of the SPF's use of the TMC is consistent with EPA's description of the TMC's operational history set forth in the TMC SB, pp. 5-8. Moreover, both of the expert reports which CBF/BWB attached as exhibits to their comments on the TMC SB (and which EPA had previously reviewed) provide additional, generally confirming detail. *See, e.g.,* Expert Report of Richard Fortuna (April 16, 2012), pp. 5-6, 13-25 (the TMC received both listed and characteristic RCRA hazardous waste through the 2000s thus rendering it a hazardous waste management unit (HWMU), and as of the date of the report (4/16/12) the TMC likely was receiving RCRA characteristic waste); Alterecho Expert Report (April 16, 2012), pp. 2-7 (during its operations the TMC received listed RCRA hazardous wastes and thus comprised a RCRA HWMU which should be either be permitted under RCRA to allow further operation, or closed).

Left out of CBF/BWB's comments, however, is the fact that in 2012, shortly after the Fortuna and Alterecho reports were prepared, steelmaking operations ceased at the SPF. Consequently, for the past approximately 15 years only stormwater (albeit potentially impacted by contact with contaminated soils and groundwater at the SPF) has been passing through the TMC. Thus, EPA's statement in the SB that "the sediment currently present in the TMC may have contacted and been contaminated" by listed hazardous waste is accurate, given that it is not clear whether any of the sediments in TMC today were in fact contacted by wastes that were discharged to the TMC more than 14 years ago. See Cmnt. Ltr., pp. 2-4. EPA also notes that CBF/BWB generally do not dispute EPA's detailed findings about the levels of contaminants

located elsewhere at the SPF.[1] These findings add further support for EPA's decision to address the TMC in accord with the legal requirements set forth in *Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities; Post-Closure Permit Requirements; Closure Process*, 63 F.R. 56710 (Vol. 63, No. 204, Oct. 22, 1998) (amending various provisions of 40 CFR Parts 264, 265, 270, and 271) (1998 Closure Rule), as described in detail below.

"B. EPA's RCRA Regulations Require That When a Hazardous Waste Storage Or Disposal Facility, Including an Unlined Surface Impoundment, Is Closed The Facility Must Establish and Implement a Groundwater Monitoring, Detection and Corrective Action Program."

While EPA generally agrees with CBF/BWB's regulatory analysis as it applies to hazardous waste storage or disposal facilities, their analysis reflects a misunderstanding of the RCRA regulations for facilities with individual SWMUs and HWMUs.

Specially, CBF/BWB assert, and EPA agrees, that when an "unlined surface impoundment" such as the TMC is closed, it can either be "clean closed" or given a permit (see Cmnt. Ltr., p. 4) and that an enforceable document may be used in lieu of "clean closure" and closure by permit under 40 CFR § 270.1(c)(7). However, CBF/BWB then argue that 40 CFR § 265.121 requires that every element of certain post closure care requirements of 40 CFR §§ 264.90 – 264.101, particularly related to groundwater monitoring and remediation, must be included in such enforceable document. CBF/BWB conclude that since none of these requirements is set forth in the SB for the TMC, EPA is acting "in violation of federal regulation." *Id.*, p. 6.

EPA disagrees with that conclusion. CBF/BWB have misinterpreted the requirements of 40 CFR § 270.1(c)(7), and more generally do not recognize the flexibility provided by the 1998 EPA RCRA rule that added 40 CFR § 265.121 and other sections to the RCRA closure regulations. *See* 1998 Closure Rule. In short, the 1998 Closure Rule gives EPA authority at facilities, including RCRA Interim Status facilities such as the SPF, that have both HWMUs and other SWMUs, to waive unit-specific requirements in favor of a more holistic remediation approach that addresses a facility as a whole. *See* 40 CFR § 265.110(d) and 40 CFR § 265.111.

> The Regional Administrator may replace all or part of the requirements of this subpart (and the unit-specific standards in §265.111(c)) applying to a regulated unit (as defined in 40 CFR 264.90), with alternative requirements for closure set out in an approved closure or post-closure plan, or in an enforceable document (as defined in 40 CFR 270.1(c)(7)), where the Regional Administrator determines that:
>
> > (1) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and

[1] EPA responds below to CBF/BWB's questioning of whether EPA's approved TMC sediment sample collection plan resulted in sufficiently representative samples.

one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release, and

(2) It is not necessary to apply the closure requirements of this subpart (and/or those referenced herein) because the alternative requirements will protect human health and the environment, and will satisfy the closure performance standard of §265.111 (a) and (b).[2]

40 CFR 265.110(d).

Thus, the provisions of 40 CFR § 265.121 (including its requirements noted by CBF/BWB of compliance with "[t]he requirements for facility-wide corrective action in Sec. 264.101" and "[t]he requirements of 40 CFR §§ 264.91 through 264.100") are subject to the flexibility afforded by 40 CFR 265.110(d).

That flexibility is explained in the Preamble to the Closure Rule,

In the 1994 notice, EPA requested comment on the possibility of allowing the Regional Administrator to establish groundwater monitoring, closure and post-closure, and financial assurance requirements on a site-specific basis at regulated units addressed through the corrective action process (see 59 FR 55778 at 55787-88). EPA specifically requested comment on this prospect for regulated units clustered with non-regulated units, all of which were releasing hazardous constituents to the environment, because of the concern that two different regulatory regimes would apply -- for example, the regulated units could be subject to the detailed requirements of Part 264 (which were developed as a preventive requirement), while the non-regulated units could be subject to the more flexible remedial requirements for corrective action under Sec. 264.101 and associated guidance.

EPA is promulgating in this notice final rules that will provide flexibility where a regulated unit is situated among SWMUs (or areas of concern), a release has occurred, and both the regulated unit and one or more SWMUs (or areas of concern) are suspected of contributing to the release. The final rule described in this section allows EPA and the authorized States to replace the regulatory requirements of Subparts F, G, and H at certain regulated units with alternative requirements developed under a remediation authority. [This portion of the

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[2] These closure performance standards require that the owner or operator "close the facility in a manner that

(a) Minimizes the need for further maintenance, and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, . . "

40 CFR 265.110(d).

> Closure Rule] applies to both permitted and interim status units. It also applies to both operating and closed facilities. Further, it can be used at closed facilities using alternative authorities [i.e enforceable documents] in lieu of post-closure permits.

63 Fed. Reg. at 56724.

For all of these reasons EPA disagrees with CBF/BWB's comment that each of the requirements of 40 CFR §§ 264.91 through 264.100 should have been part of the remedy proposed in the SB for the TMC.

"C. The Detailed Facility-Specific Post-Closure Care Requirements Applicable to the TMC Must be Prescribed and Implemented in a Permit or Enforceable Document Specifically Tailored to the TMC, Not in a Site-Wide Groundwater Monitoring Program."

In this section of their Cmnt. Ltr., CBF/BWB reiterate that all closure requirements, particularly those applicable to groundwater detection, monitoring and remediation, should have been included in the TMCSB. See Cmnt. Ltr., p. 6. CBF/BWB then conclude that "[b]ecause EPA's SoB fails to address possible releases of contaminated groundwater from the TMC on a parcel or Facility-specific basis, and fails to comply with the RCRA requirements for closure and post-closure care, it must . . . be withdrawn and replaced with a new SoB and Work Plan which include compliance with the RCRA requirements for groundwater protection." *Id.* at 7.

EPA does not agree with this conclusion for the reasons given in response to CBF/BWB's previous comments. Indeed, the Preamble to the Closure Rule addresses this issue directly:

> Similarly, the groundwater monitoring requirements designed for regulated units do not provide sufficient flexibility for complex cleanups. The requirement to place wells at the downgradient edge of a regulated unit often would not make sense if there are SWMUs further downgradient. Also, the Part 264 regulations contain specific requirements for the selection of cleanup levels for hazardous constituents released to groundwater, and do not provide for considerations of technical practicability, which are critical in a remediation context. Corrective action and other remediation authorities provide more flexible (yet protective) regimes for selecting cleanup levels.

63 Fed. Reg. at 56725.

CBF/BWB's comments concerning the hydraulic connection between TMC and facility-wide groundwater underscore the need for EPA to address groundwater at SPF with a more holistic remediation approach that addresses groundwater at the Facility as a whole and not on a unit-specific basis. To that end, EPA has directed TPA to conduct an extensive, facility-wide groundwater investigation, including in the area of the TMC (including any infiltrating groundwater) that will address the various assertions made by the experts cited by CBF/BWB in

their comments.[3] A Facility-wide groundwater characterization has been taking place over the past two years, based on both large-scale and small-scale groundwater sampling events, including in the area of the TMC. Additionally, there exist historical groundwater data from previous characterizations that EPA is reviewing. EPA will ultimately ensure that groundwater characterization will consolidate all the groundwater data, assess the extent and magnitude of contamination, identify primary constituents-of-concern, define potential groundwater usage and establish groundwater cleanup goals. Once the characterization is completed and EPA evaluates it, EPA will propose a Facility-wide groundwater remedy.

As stated above, given that EPA has sufficient data to propose a remedy for TMC sediments, rather than delay this work pending completion of the groundwater investigation, EPA moved forward with its remedy proposal for sediments at TMC. After review of CBF/BWB's comments, EPA finds no basis upon which to withdraw its proposal.

"D. Prior Correspondence With EPA and MDE Indicated that the Agencies Agreed that Closure and Post-Closure Care of the TMC would be done In a Facility-specific Fashion, Using an 'Enforceable Document.'

CBF/BWB summarize a number of communications that EPA, MDE, CBF and BWB have exchanged in recent years in which EPA has confirmed that remediation at the SPF, including the TMC, will be done in accordance with RCRA, to be accomplished using the SA as an enforceable document in accord with 40 CFR § 265.121. CBF/BWB then state "[o]ur position was that the Settlement Agreement lacks the necessary specificity, including provisions requiring that the facility comply with all the applicable RCRA requirements for closure and post-closure care, including those at 40 CFR §§ 264.91-264.101 and described above, as required by 40 CFR § 265.121." See Cmnt. Ltr., p. 8.

CBF/BWB previously made this argument in a May 25, 2016 letter to EPA, to which (as CBF/BWB acknowledge) EPA responded in detail in an August 18, 2016 letter, attached to CBF/BWB's comments on the SB as Exhibit H. In its letter EPA explained that in addition to "clean closure" and closure by permit, "a RCRA Corrective Action remedy can be accomplished . . . through a site-specific enforceable document whose provisions meet the same goals as a closure by permit." EPA Aug. 18, 2016 letter, p. 2. (cit. omitted). After describing in detail the SA process under which cleanup plans for individual parcels at the SPF will be developed, culminating in the issuance of SBs and FDRTCs, EPA noted that each "FDRTC will then be considered incorporated into and become enforceable under the SA. . . . The SA qualifies as an enforceable document in accord with 40 CFR § 265.121, and will assure a RCRA Corrective Action remediation will be completed at the SPF." *Id.*

Thus, EPA disagrees with this comment. When EPA proposes and ultimately selects a Facility-wide remedy for groundwater (consistent with relevant EPA guidance and the applicable

[3] CBF/BWB offer several conclusions about the hydrologic connection between the TMC and groundwater at the SPF, and the need for TMC-specific monitoring, made by experts and other observers when steelmaking was still occurring at the SPF. CBF/TMC Cmnt. Ltr., pp. 6-7. As noted in its SB, EPA agrees there is a hydrologic connection between the TMC and groundwater at the SPF, whose implications for remediation measures based on current conditions it is investigating.

public participation requirements), that remedy will be incorporated into and become enforceable under the SA. SA para. 72.

"E. **The Remedial Measures Proposed in the Statement of Basis Lack Adequate Technical Support and Would Not Provide The Necessary Protections for Human Health and the Environment."**

CBF/BWB state that the proposed remedy in the SB "is premised entirely on the notion that the contaminated sediments in the TMC are contaminated environmental media that contain hazardous waste and should be handled according to EPA's guidance applicable to remediation waste. Notwithstanding our continuing objection to this characterization and approach to TMC as stated above, we have further concerns about the remedy as proposed." Cmnt. Ltr., p. 8.

EPA disagrees with CBF/BWB's characterization of EPA's position as being that "the contaminated sediments in the TMC are contaminated environmental media that contain hazardous waste." As EPA stated in the SB (and discussed further above), "the sediment currently present in the TMC **may** have contacted and been contaminated with" listed hazardous waste, including "wastewater treatment sludges from electroplating operations, containing a listed hazardous waste (EPA Waste Code F006)" and "spent pickle liquor, which was beneficially reused to adjust pH in the TMC, and is also a listed hazardous waste (K062) when disposed rather than reused." SB, p. 6. As noted above, it is not clear whether any of the sediments in the TMC today were contacted by wastes that were last discharged to the TMC more than 14 years ago. In any event, under EPA's "Contained in" Policy, as set forth in the Management of Remediation Waste Under RCRA, EPA530-F-98-026 (Oct. 1998), contaminated environmental media such as the sediments remaining in the TMC, even if once in contact with RCRA hazardous waste, are only subject to regulation under RCRA if they "contain" hazardous waste. As EPA explained in the SB,

> EPA generally considers contaminated environmental media to contain hazardous waste: (1) when they exhibit a characteristic of hazardous waste; or, (2) when they are contaminated with concentrations of hazardous constituents from listed hazardous waste that are above health-based levels. **If** contaminated environmental media contain hazardous waste, they are subject to all applicable RCRA requirements until they no longer contain hazardous waste. EPA considers contaminated environmental media to no longer contain hazardous waste: (1) when they no longer exhibit a characteristic of hazardous waste; and (2) when concentrations of hazardous constituents from listed hazardous wastes are below health-based levels.

SB, pp. 6-7 (emph. added). *See also* EPA's "Contained in" Policy, pp. 9-10.

As EPA further explained in the SB, consistent with its "Contained in" Policy it has determined that the sediments in the TMC do not fail the RCRA Toxicity Characteristic Leaching Procedure (TCLP) test, nor do they contain hazardous constituents from listed hazardous wastes that are above health-based levels. With respect to this determination, CBF/BWB assert "there is no evidence to support the remediation waste determination in the

record other than an unsupported statement in an email dated February 4, 2016 from MDE attached as appendix A to the June 14, 2017 Sediment Characterization Report for Tin Mill Canal. There is no supporting this determination, it should be provided to the public and made part of the Administrative Record supporting the SoB for the proposed remedy." Cmnt. Ltr., p. 8.

The February 4, 2016 email from MDE provides all the support for EPA's determination that is required under RCRA. As EPA noted in its "Contained in" Policy, "[s]ince this determination can be made through relatively straightforward analytical testing, no formal "contained-in" determination by EPA or an authorized state is required." "Contained in" Policy, p. 10.

CBF/BWB next assert that

> there is no clear determination by EPA or MDE, that the sediment collection plan resulted in a representative sample. The QAPP included in the Administrative Record contains standard operating procedures that require representative sampling in obtaining various samples from sediment, soil, and groundwater. A Sampling and Analysis Plan dated February 17, 2015 was submitted by EnviroAnalytics Group to EPA and MDE for approval, but neither that plan, nor any of the reports or studies contained in the Administrative Record state what protocol was followed or what statistical analysis was applied to assure an adequately representative sample of contaminated sediments in TMC.

Cmnt. Ltr., p. 8.

In response, EPA notes that 16 transects perpendicular to the TMC at approximately 500 foot intervals were established for sampling. For each transect, generally four discrete samples were collected (two from the top foot and two from the bottom foot, unless sediment was not deep enough). A total of 58 samples were analyzed for volatile organic compounds (VOCs), RCRA metals including hexavalent chromium, and TCLP VOCs. In addition, generally two composite samples per transect (mixed from the discrete shallow and deep locations) were collected for a total of 29 samples, each of which were analyzed for semi-volatile organic compounds (SVOCs), TCLP SVOCs, TCLP inorganics, cyanide, and polychlorinated biphenyl (PCBs). In sum, this sampling plan resulted in representative samples being taken from the sediment in the TMC.

No exceedances of TCLP regulatory limits, no exceedances of the health-based levels set by MDE, and no exceedances for the regulatory limit of 50 mg/kg for PCBs under the Toxic Substances Control Act, 15 U.S.C. §§ 2601-2697 (TSCA), were found in any of the samples, except for one initial composite sample which showed an exceedance for PCBs. To further characterize this exceedance, an additional 18 grab samples at depth were collected for PCB analysis along two transect intervals surrounding the location of the sample that exceeded the

TSCA 50 mg/kg regulatory limit for PCBs. The consistency of the results for all other constituents supports EPA's determination that the sediment in the TMC is well characterized.

CBF/BWB next assert that

> the proposed remedy for the contaminated sediment and TMC itself causes us concerns. We agree with the requirement that any PCB contaminated sediments exceeding 50 mg/kg be transported and disposed of at a TSCA regulated PCB disposal facility, but the disposal into Greys Landfill of excavated environmental media containing hazardous constituents at concentrations above risk ratios is inappropriate. Grey's Landfill is an unlined industrial landfill. As the attached expert reports state, there is a clear hydrologic connection between Grey's Landfill and Bear Creek. Any excavated sediments or contaminated environmental media should be disposed off-site at a RCRA regulated disposal facility.

Cmnt. Ltr., pp. 8-9.

In response, EPA notes that Greys Landfill is currently used for the disposal of non-hazardous waste associated with ongoing environmental compliance and decommissioning/demolition and redevelopment activities at SPF, in accordance with applicable State regulations. Specifically, the operating procedures, design plans, and specifications applicable to Greys Landfill have been developed to meet applicable compliance requirements set forth in COMAR 26.04.07.19 for industrial wastes, and COMAR 26.04.07.13, 26.04.07.16, and 26.04.07.18 for demolition waste. Additionally, the 1997 CD, pp. 33 – 41, allowed for the disposal of certain wastes found at the Facility, including sediments from the TMC. For all of these reasons EPA has determined that the landfill is an appropriate destination for the excavated TMC sediments (other than those exceeding the TSCA 50 mg/kg regulatory limit for PCBs) notwithstanding the fact that it is unlined.

Finally, CBF/BWB assert that

> the proposed remedy of capping the bottom of TMC does not address the continuing inflow of contaminated groundwater to the canal along its bank. If the purpose of TMC in the future is to solely provide for the conveyance of stormwater as stated on page 10 of the SoB, then measures must be taken to prevent further inflow of groundwater to the canal. As part of the groundwater measures we propose above, TMC should be fully lined with an impervious barrier.

Cmnt. Ltr., p. 9.

In response, EPA reiterates that its proposed remedy addresses risk from direct exposure to the sediment, and defers any potential groundwater remedy until such time when groundwater at the entire Facility has been investigated. Based on all currently available information, there is

no reason to prevent infiltration of groundwater to the TMC. The excavation and removal of contaminated sediments from the channel will, however, improve the condition of TMC and reduce any impacts on surface water. Furthermore, as noted in the SB, the water flow in the TMC passes through the NPDES-permitted Humphrey's Creek Waste Water Treatment Plant where it is treated to meet the required discharge standards prior to discharge at Outfall 014.

CBF/BWB Conclusion

CBF/BWB conclude their comments with several general remarks about the history of the TMC which do not concern the remedy that EPA proposed in the SB, and which therefore do not require a response.