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REVISED REMEDIAL INVESTIGATION AND ALTERNATIVES ANALYSIS REPORT

FORMER SPERRY REMINGTON SITE – NORTH PORTION
777 SOUTH MAIN STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NEW YORK
NYSDEC BCP SITE #C808022

DRAFT

Prepared for

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
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Project MN0832K18

12 October 2026

CERTIFICATION

I, Aron Krasnopoler, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation and Alternatives Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



10/12/2026

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
AA	alternatives analysis
AOC	area of concern
ATSDR	Agency for Toxic Substances and Disease Registry
ACM	asbestos-containing materials
BCP	Brownfields Cleanup Program
CCHD	Chemung County Health Department
CCR	construction completion report
CCSD	Chemung County Sewer District
CCTV	closed-circuit television
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-dichloroethene
COC	compound of concern
COPC	compound of potential concern
CT	carbon tetrachloride
CTP	communication test point
DEHP	bis(2-ethylhexyl) phthalate
DER	Division of Environmental Remediation
DPT	direct-push technology
DRO	diesel range organics
EC	engineering control
ECSD	Elmira City School District
EHS	Elmira High School
EMP	environmental management plan
EWP	excavation work plan
FER	final engineering report
FFC	Football Field Complex
FIS	Former Industrial Sewer
FSP	field sampling plan

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ft amsl	feet above mean sea level
ft bgs	feet below ground surface
ft bfg	feet below final grade
GRA	general response action
GSR	Green & Sustainable Remediation
HSA	hollow-stem augering
HVAC	heating, ventilation, and air conditioning
HVS	high-volume sampling
IC	institutional control
IC/EC Plan	institutional and engineering controls plan
IDM	investigation-derived materials
IG	Infiltration Gallery
IRM	interim remedial measure
ISMP	interim site management plan
IIWA	Immediate Investigation Work Assignment
MC	methylene chloride
mg/kg	milligrams per kilogram
MNA	Monitored natural attenuation
NAF	Northern Athletic Fields
NFA	No further action
NSRC	Norfolk Southern Railway Corporation
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operation and maintenance
OIS	oxygen-injection system
OM&M	operation, maintenance, and monitoring
OS2	Former Oil Skimmer #2
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PDI	pre-design investigation

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PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PRR	Periodic Review Report
QA/QC	quality assurance / quality control
QAPP	quality assurance project plan
QC	quality control
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
redox	reduction-oxidation
RI	remedial investigation
SC	site characterization
SCG	Standards, Criteria, and Guidance
SCO	soil cleanup objective
SCV	Soil Cover Verification
SED	State Education Department
SGV	Sediment Guidance Value
SMDM	Stormwater Management Design Manual
SMP	Site Management Plan
SSD	sub-slab depressurization
STCC	Southern Tier Commerce Center
STRA	short-term response action
SVIA	supplemental vapor intrusion assessment
SVOC	semi-volatile organic compound
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TOGS	Technical and Operational Guidance Series

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TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VFW	Veterans of Foreign Wars
VI	vapor intrusion
VOC	volatile organic compound

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1. INTRODUCTION

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York affiliate B&B Engineers & Geologists of New York, P.C. (collectively, Geosyntec) are submitting this *Remedial Investigation and Alternatives Analysis Report* (RI/AA Report) for the Revised Brownfields Cleanup Program (BCP) Site #c808022 (Former Sperry Remington Site – North Portion), in accordance with the BCP Agreement for the Site.

The Site consists of the Elmira High School (EHS) located in Elmira, New York (**Figure 1-1**). With the consent of the Elmira City School District (ECSD), on 26 April 2016, Unisys submitted an application to enter the Site as presented on **Figure 1-2A** into the New York State Department of Environmental Conservation (NYSDEC) BCP. On 10 June 2016, NYSDEC gave an initial determination that the BCP application was complete and the public comment period on the application was open until 22 July 2016. The BCP Agreement for the Site was executed on 23 March 2017. Since then, Unisys has conducted a Remedial Investigation (RI) and a number of Interim Remedial Measures (IRMs) at the Site under the BCP agreement. IRM activities were completed in July 2024. Referenced Agency Approvals cited within this report are provided as **Appendix A**.

An amendment to the BCP Agreement was submitted on 11 September 2024 to divide the Site into separate areas representing areas that have been remediated through IRMs and areas where the RI is ongoing. The Site boundaries were further amended as provided in the Brownfield Cleanup Amendment dated 15 May 2026. Areas remediated through IRMs are included in the Revised BCP Site #c808022 (Former Sperry Remington Site – North Portion) boundary. Areas where the RI is ongoing are included in the New BCP Site #c808054 (Former Sperry Remington Site – North Portion 2). The Revised Site #c808022 and New BCP Site #c808054 boundaries are depicted on **Figure 1-2B**.

This RI/AA Report provides the data collected during RI activities and conclusions for remedy selection in the Alternatives Analysis (AA) at the amended Former Sperry Remington Site – North Portion and will be referred to herein as the Revised BCP Site. The RI and AA for the Former Sperry Remington Site – North Portion 2 will be addressed in a separate report and will be referred to herein as the New BCP Site. For overall context, certain background sections below address the overall Site, which also includes the Revised BCP Site and New BCP Site.

1.1 Site Description and Background

The Site was the subject of multiple environmental investigations between 1998 and 2017 as discussed in Section 1.4. Multiple compounds of potential concern (COPCs) were identified during these investigations. COPCs are chemicals detected at the Site that pose a potential risk to human health or the environment. Although subsurface soil contained chemicals at levels exceeding public health comparison values, the school community was not being exposed to them. NYSDOH recommended at that time that ECSD develop a written soil management plan to "minimize potential public exposures to contaminated subsurface materials."

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An Order on Consent and Administrative Settlement (Order) between Unisys and the NYSDEC for the Site was approved by NYSDEC on 7 July 2014. Unisys conducted Site Characterization (SC) activities at the Site in accordance with the Order and the *Site Characterization Work Plan* (SC Work Plan; Geosyntec, 2014). The *Site Characterization Data Report* (SC Data Report; Geosyntec, 2015a) submitted to NYSDEC on 6 February 2015 presented the initial activities, results, and findings of the SC. The purpose of this report was to present the activities conducted between 21 July and 13 November 2014 under the SC Work Plan for the combined industrial sewer inspection, soil investigation, and groundwater investigation and provide a discussion of the data collected. An in-line camera survey was conducted to investigate the extent of the former industrial sewer and piping infrastructure, during which fine-grained material was collected and analyzed for polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and metals.

Additional SC activities were conducted under SC Work Plan addenda dated 22 May 2015 (SC Work Plan Addendum #1; Geosyntec, 2015b), 8 January 2016 (SC Work Plan Addendum #2; Geosyntec, 2016a), 9 August 2016 (SC Work Plan Addendum #3; Geosyntec, 2016b), 3 February 2017 (SC Work Plan Addendum #4; Geosyntec, 2017a), 16 March 2017 (SC Work Plan Addendum #5; Geosyntec, 2017b), 4 April 2017 (SC Work Plan Addendum #5 Modification; Geosyntec, 2017f), 9 May 2017 (SC Work Plan Addendum #5 Modification #2; Geosyntec, 2017g), 15 June 2017 (SC Work Plan Addendum #5 Modification #3; Geosyntec, 2017h), and 7 July 2017 (Amendment #1 Site Characterization Work Plan; Geosyntec, 2017i). Unisys submitted a SC Report (Geosyntec, 2017c) in May 2017 that documented the results presented in the SC Data Report and the results of those activities conducted between 13 July 2015 and 13 April 2017 and provided references to previous reports to present a full summary of work (approved contingent upon modifications by the NYSDEC on 15 August 2018 [**Appendix A**]). The Order was terminated on 28 November 2016 following acceptance of the Site into the BCP. An RI work plan was submitted to NYSDEC on 7 September 2018 (RI Work Plan) and was revised in accordance with NYSDEC comments received on 15 October 2018, leading to a 29 May 2019 submittal (Revised RI Work Plan; Geosyntec, 2019a). The Revised RI Work Plan was approved as modified on 24 July 2019 (**Appendix A**). The RI and IRMs were conducted pursuant to the BCP Agreement, the Revised RI Work Plan and supplemental work plans, and IRM work plans approved by NYSDEC. Additional information regarding previous investigations is provided in Section 1.4.

1.1.1 Site Location and Description

The Site, including both the Revised BCP Site #c808022 and the New BCP Site #c808054, is located at 777 South Main Street in Elmira, New York (**Figure 1-1**). The Site is approximately 34 acres in area and is bounded by South Main Street to the west, the Southern Tier Commerce Center (STCC) to the south, rail lines to the east, and Veterans of Foreign Wars (VFW) Rex Field Post 901 to the north. The rail lines are owned and operated by Norfolk Southern Railway Corporation (NSRC). Located approximately 1,000 feet to the east is Miller Pond, which discharges to Coldbrook Creek, also to the east of the Site. The Site is occupied by EHS, with Site features illustrated on **Figure 1-2B**. **Figure 1-2B** depicts the Revised BCP Site #c808022, which occupies approximately 26.28 acres of the Site, and the New BCP Site #c808054, which occupies approximately 7.55 acres of the Site.

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1.1.2 Site History

From the late 1880s to the early 1970s, various industrial facilities have occupied the Site:

- 1887–1909: B. W. Payne & Sons, manufacturer of high-speed steam engines
- 1909–1935: Morrow Manufacturing, manufacturer of drill chucks, machine parts and tools
- 1935–1937: Elmira Precision Tool Company, manufacturer of typewriter parts for Remington Rand
- 1937–1972: Remington Rand, manufacturer of typewriters and adding machines
- 1974–1977: Westinghouse Electric Corporation (Westinghouse), manufacturer that occupied the part of the Site south of the City of Elmira–Town of Southport township line, primarily for warehousing

The buildings that were part of the historical industrial structures were mapped (**Figure 1-3**) based on the *Final Engineering Report and Description of Proposed Waste Treatment Installation* (Lancy Laboratories, Inc. [Lancy], 1967).

Between 1972 and 1977, the former Remington Rand plant was decommissioned and demolished. The structures shown on **Figure 1-3** were demolished. The administrative record contains little detail regarding decommissioning and demolition activities. Sperry Rand (successor to Remington Rand) conveyed the property to the Chemung County Industrial Development Agency on 28 December 1973. On 21 April 1977, Chemung County Industrial Development Agency conveyed the property to Westinghouse, and that same day Westinghouse conveyed that property to ECSD. Construction of Southside High School (now EHS) began in 1979. The Site, including the Revised BCP Site #c808022, is currently occupied by EHS.

1.2 Physical Setting

1.2.1 Land Use

The Site is presently used as a high school and consists of EHS parking lots, athletic fields, and academic buildings (**Figure 1-2B**). Land use is commercial and industrial to the south and residential and commercial to the west and north. To the east, land is used for railroad operations on NSRC property, and residential and commercial properties lie beyond the railroad. The railroad predates the industrial development of the Site.

1.2.2 Topography and Drainage

The topography of the Site is relatively flat with a slight gradient to the east. The elevation of EHS is approximately 854 feet above mean sea level (ft amsl), as depicted on the 1976 United States Geological Survey (USGS) 7.5-minute topographic quadrangle map for Elmira, New York (**Figure 1-1**). Natural surface drainage has been altered significantly by construction at the Site and by IRMs. Drainage currently is either to storm drains (a.k.a., catch basins) and the stormwater sewer system or eastward toward the railroad tracks (Dames & Moore, 1988).

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1.2.3 Climate

The climate in the region is humid-continental. The following data for Elmira is from the U.S. Climate Normals, calculated over the recent 30-year period (1991 to 2020; National Centers for Environmental Information, 2021). Temperatures ranged from a daily minimum of 15.9 degrees Fahrenheit (°F) in January to a daily maximum of 83.7 °F in July, with a mean annual temperature of 48.2 °F. The mean annual precipitation was 38.07 inches, with mean monthly precipitation greater than three inches between April and October. Maximum mean rainfall was in June (4.19 inches), followed closely by August and July (4.09 and 4.05 inches, respectively). Average annual snowfall was 41.8 inches, with monthly snowfall greater than eight inches between December and March. Snow generally covers the ground from about mid-December to early March.

1.3 Areas of Concern

The areas of concern (AOCs) identified at the Site are listed in **Table 1-1**. An *area of concern* or *AOC* is any existing or former location at a site where COPCs are known or suspected to have been discharged, which is considered a potential source area for investigation in this RI. These include locations where COPCs were generated, manufactured, refined, transported, stored, handled, treated, or disposed of and locations where they may have migrated. In June 2013, NYSDEC identified potential AOCs (AOC-1A through AOC-17) at the EHS property based on information related to historical use of the EHS property and previous environmental investigation results. AOC-18 was identified by NYSDEC in October 2018 based on detections of trichloroethene (TCE) in soils excavated by ECSD for storm drain installation in 2017. AOC-19 was identified during RI sampling activities in August and December 2019 in which elevated PCB concentrations were reported in soil at the water table within a portion of the Northern Athletic Fields (NAF). AOC-20 was identified based on characterization of a historical water line pipe and valve and associated soils during IRM activities in the NAF in July 2023. **Table 1-1** provides a description, potential or identified sources, COPCs, potential transport mechanisms and exposure pathway/receptors, media of concern, and summary of investigations completed for each AOC. The approximate location and extent of each AOC identified by NYSDEC and Geosyntec is shown on **Figure 1-4**. Some AOCs or portions of AOCs are located beyond the Revised BCP Site Boundary (**Figure 1-2B**). This RI/AA Report addresses AOCs within the boundaries of the Revised BCP Site #c808022. Investigation of AOCs within the boundaries of the New BCP Site #c808054 and in off-Site areas are ongoing. Portions of AOCs that lie on the adjoining STCC property to the south of the Site will be addressed in the RI of the Former Sperry Remington Site (NYSDEC #808043 - Operable Unit 1) or the SC of the Former Scott Technologies Site (NYSDEC #p808049). Portions of AOCs or AOCs that lie on the Norfolk Southern property to the east of the Site will be addressed in the RI for the Former Sperry Remington Site – North Portion 2 (NYSDEC #c808054).

Site COPCs for soils, groundwater, and soil vapor were defined by the SC (Geosyntec, 2019b). The SC Report presented activities conducted in accordance with the SC Work Plan for the former industrial sewer inspection, soil investigation, and groundwater investigation and provided a discussion of data collected as part of those investigations conducted to date. Data were presented in the SC Report to discuss evaluation of the former industrial sewer for potential migration

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pathways to media at the Site, evaluate the nature and extent of COPCs in soil and groundwater at the Site, evaluate AOCs and identify data gaps, and provide recommendations for updating the environmental management plan and conducting additional investigation, if necessary. Site COPCs for soils were identified by comparing analytical results to values consistent with Restricted Residential Soil Cleanup Objectives (SCOs) presented in the New York Codes, Rules and Regulations (NYCRR) Title 6, Subpart 375. While there are presently no SCOs specific to property used as a school, the NYSDEC in consultation with NYSDOH have established the Restricted Residential SCO values as protective of adults and children where the potential for and types of exposure to Site soils would be similar to that experienced in a residential setting such as an apartment or condominium having lawn or playground areas for child residents. The NYSDEC and NYSDOH have also deemed the Restricted Residential SCOs appropriate objectives for active recreational activities, such as those involving contact sports. As discussed below, the approach for this Site includes, among other things, the creation of two feet of clean cover for impacted areas or a hardscape cover consisting of concrete sidewalks, asphalt driveways, walkways, and parking lots.

COPCs identified for soils include metals, PCBs, SVOCs, and volatile organic compounds (VOCs). COPCs for groundwater were identified by comparing the most recent groundwater analytical data to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 (NYSDEC, 1998). COPCs identified for groundwater include metals, PCBs, SVOCs, and VOCs. At the request of NYSDEC, emerging contaminants, per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane, were evaluated in soil and groundwater.

COPCs for soil vapor were identified by comparing previous sub-slab vapor and indoor analytical data to the New York State Soil Vapor/Indoor Decision Matrices issued by NYSDOH in 2006 and updated in 2017 (NYSDOH, 2006 and 2017) and consideration of soil and groundwater data. COPCs identified for soil vapor, sub-slab vapor, and indoor air include VOCs and PCBs.

AOCs are summarized below with respect to areas of the Revised BCP Site presented on **Figure 1-4** that have been addressed by IRMs (Section 3). This approach reflects the size and complexity of the Site. RI activities presented in Section 2 were conducted by area to investigate multiple AOCs that overlapped or were located in close proximity. This approach also supported the designs of IRMs presented in Section 3 that were driven by ECSD's schedule for capital improvements.

1.3.1 EHS Building

As shown on **Figure 1-3** and **1-4**, historical use of the EHS building area included settling ponds, aboveground storage tanks, earthen waste pits, sludge tanks, concrete vaults, drywell structures, plating/heat treatment/tumbling areas, a wire pickling area, possible disposal areas, and machine shop areas. The EHS building area includes AOC-1A (Contaminated Sub-Slab Vapors) and AOC-1B (Indoor Air Quality). Several AOCs overlap the EHS building including AOC-2E (Waste Pit near Building 44), AOC-4 (Earthen Waste Pits near EHS Gym and Pool), AOC-5 (Sludge Tanks/Beds/Brick Pits near Building 64), AOC-6 (Concrete Vaults), AOC-7 (Drywell Structures), AOC-10D (Contaminated Subsurface Soils—Soil in Shallow Wells), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-13 (Metals Cleaning, Vapor Degreaser, and Solvent Still),

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AOC-15 (Wire Pickling Area), AOC-16 (Machine Shop Area), and AOC-17 (Possible Disposal Areas) as depicted on **Figure 1-4**.

1.3.2 Northern Athletic Fields

As shown on **Figure 1-3** and **1-4**, the NAF was used historically for garages, factory buildings, machine shops, and oil handling. AOCs identified within the NAF include AOC-2C (Drywell Near Building 49), AOC-3A (1979 Drywell Field), AOC-7 (Drywell Structures), AOC-10A (Contaminated Subsurface Soils – Metals), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-16 (Machine Shop Area), AOC-17 (Possible Disposal Area), AOC-19 (Drum Nest Area), and AOC-20 (Historical Water Line) as depicted on **Figure 1-4**. AOC-10A (Contaminated Subsurface Soils - Metals) was identified by previous detections of metals at sample locations SSHS-B42, SSHS-B43, and SSHS-B52 during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001).

1.3.3 Football Field Complex

As shown on **Figure 1-3** and **1-4**, the Football Field Complex (FFC) was used historically for oil handling, carbonizing, heat treatment, sand blasting, and tool hardening. As depicted on **Figure 1-4**, AOCs identified within the FFC include AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-3 (1979 Storm Sewer), AOC-6 (Concrete Vaults), AOC-8 (Westinghouse Transformer Spill near Building 28A), AOC-9 (Oil Storage and Handling), AOC-10B (Contaminated Subsurface Soils – PCBs, SVOCs and VOCs), AOC-10C (Contaminated Subsurface Soils – Petroleum Impacts), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), and AOC-16 (Machine Shop Area). AOC-10B (Contaminated Subsurface Soils – PCBs, VOCs, and SVOCs) was identified by previous detections of PCBs at B3, FB7, and B15 and VOCs at FB5 and SVOCs at FB6 during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001).

Other AOCs within the FFC were identified by previous detections of COPCs in soil (AOC-10B/C/D) and groundwater (AOC-11) including PCBs at sample locations SSHS-B15, B3, FB7, and VOCs at sample location FB5, and SVOCs at sample location FB6.

1.3.4 Main Parking Lot and Tennis Courts

As shown on **Figure 1-3** and **1-4**, the Main Parking Lot and Tennis Courts area was used historically as factory buildings and machine shops. AOCs identified in the Main Parking Lot and Tennis Courts area include AOC-3 (1979 Storm Sewer), AOC-14 (Power Washer and Rust Prevention Dip Operation), and AOC-16 (Machine Shop Area). Other AOCs within the Main Parking Lot and Tennis Courts area were identified by previous detections of COPCs in groundwater (AOC-11) as depicted on **Figure 1-4**.

1.3.5 Rear Parking Lot

As shown on **Figure 1-3**, the EHS Rear Parking Lot was used historically for power generation including the powerhouse and boiler room with coal and oil storage. AOCs identified in the Rear Parking Lot include AOC-3 (1979 Storm Sewer) and AOC-17 (Possible Disposal Areas) as depicted on **Figure 1-4**.

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1.3.6 Former Industrial Sewer

As shown on **Figure 1-4**, the Former Industrial Sewer (FIS) was used historically to discharge industrial waste from plant operations. The FIS extended to the southern Site boundary and discharged to Former Oil Skimmer #2 (OS2) located on STCC property. The FIS has been identified as AOC-2 (Pre-1979 Combined Industrial/Storm Sewer). AOC-2D (Manhole SW-73 Near Building 28A) is included in the investigation of the FIS. Portions of the FIS extend onto the NSRC property to the east. Findings and additional investigation of the FIS segments located on the off-Site NSRC property will be addressed under #c808054.

1.3.7 Stormwater Sewer

As shown on **Figure 1-4**, ECSD installed a stormwater sewer system as part of construction of EHS between 1979 and 1980. The stormwater sewer has been identified as AOC-3 (1979 Storm Sewer) regarding potential transport of Site soils to surface water (**Figure 1-4**).

1.4 Previous Investigations

Investigations completed prior to SC and IRM investigations at the EHS property include the following:

- Empire Soils Investigations, Inc. 1977. *Soils and Foundation Study, Southside Recreation and Education Facility, Elmira, New York*. 13 May. This report presents the results of an investigation and analysis of the subsurface conditions at the Site to assess building foundations. The investigation included 16 soil borings to approximately 40 feet below ground surface (ft bgs) and subsequent engineering analysis regarding foundations.
- Dames & Moore. 1988. *Preliminary Site Assessment, Remington Rand Plant, City of Elmira, Chemung County, New York*. The preliminary site assessment report describes the results of a review of readily available information and visual reconnaissance of the property from public areas. The objectives of the preliminary site assessment were to outline the nature and extent of storage, usage or disposal areas for potentially hazardous materials, environmental migration pathways, and human or environmental exposure points. The literature review in this report included the collection and evaluation of historical data, including air photographs, information from state and local government agency files, published literature, and other sources. Field work was not performed other than a brief visit to the site to view surface conditions from adjacent public areas.
- Matrix Environmental Technologies. 1998. *Subsurface Environmental Assessment Report, 777 South Main Street to Parkside Drive*. 9 November. This report presented the findings of a subsurface environmental assessment performed by Matrix Environmental Technologies from May 1996 through July 1998. The assessment was the result of a discovery of an oil-like sheen off the southwest shore of Miller Pond by an area resident. The incident was reported to NYSDEC which responded to the suspected spill and initiated the investigation. NYSDEC retained Matrix to perform and oversee investigation activities. Initial subsurface assessment was focused along

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the shore of Miller Pond and later progressed to the west and eventually onto the EHS property. Upon completion of the investigation, 29 monitoring wells were installed and 60 soil borings were advanced. Other work included a geophysical study consisting of terrain conductivity and ground penetrating radar surveys aimed at locating underground storage tanks or buried drums and indoor air sampling of the high school and several residences. The report determined that the plume of weathered dissolved and liquid-phase fuel is estimated to be approximately 57 acres in area and extends from the EHS building to the east approximately 1,000 ft to Miller Pond. The report concluded that the source of the contamination must have occurred where the EHS building is currently located. The report stated that the most logical source of the fuel oil plume is the former oil storage tanks. The location of these tanks would generally correspond with the current location of the school gymnasium at the north end of the building.

- NYSDEC. 2001. *May–October 2000 NYSDEC Sampling Report, Southside High School and Adjacent Properties, City of Elmira, Chemung County*. 30 September. This report was prepared to evaluate public health implications of indoor air samples collected at Southside High School (now EHS). Surface soil and indoor air data were collected and presented in this report. The surface soil and indoor air data collected was stated to pose no apparent public health hazard. Average levels of contaminants in surface soils did not exceed the referenced public health comparison values. Average levels of total PCBs in surface soils were noted to exceed typical background levels. Levels of total PCBs above referenced public health comparison values were located in deeper subsurface soil near the school building.
- NYSDOH. 2003. *Health Consultation, Southside High School, City of Elmira, Chemung County*. 30 September. In 2003, New York State Department of Health completed a Health Consultation for Southside High School (now EHS; NYSDOH, 2003) that concluded that environmental conditions at EHS did not pose an apparent health hazard because average levels of compounds of potential concern (COPCs) in surface soils did not exceed public health comparison values. This health consultation recommended that measures be taken to minimize the potential for human exposure to subsurface soils containing elevated concentrations of PCBs, polyaromatic hydrocarbons (PAHs), VOCs, and metals. The consultation also recommended that the school district review recommendations regarding indoor air to determine if additional actions would be warranted.
- NYSDEC. 2004. *IIWA Report on Groundwater Chlorinated Solvent Investigation, Southside High School and Adjacent Properties, City of Elmira, Chemung County*. 1 March. The Immediate Investigation Work Assignment (IIWA) was initiated by NYSDEC to further investigate the environmental and public health impacts of the presence of chlorinated solvents in groundwater. The IIWA was conducted to determine if the former pit (pre-1978) behind the EHS building is the source of chlorinated solvents in groundwater, to evaluate the presence of chlorinated solvents in deeper groundwater, and to determine if chlorinated solvents detected in off-Site groundwater had the potential to impact nearby homes. The IIWA workplan was developed based on the results of groundwater sampling conducted in 2002. The work

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plan included two soil borings to discover if a potential source of chlorinated solvents existed in the former pit area behind the school, three deep groundwater monitoring wells to determine the extent of impact on deep groundwater, and a passive soil gas survey (18 probes) to evaluate soil gas at nearby residences. The investigation reported elevated concentrations of chlorinated solvents present in groundwater east of the EHS building. Results indicated that limited off-Site migration of solvent contaminated groundwater had occurred. The source of solvent contamination was not identified during the IIWA.

1.4.1 Westinghouse Transformer Release Investigation

As noted in Section 1.1.2, Westinghouse occupied the part of the Site south of the City of Elmira–Town of Southport township line, primarily for warehousing between 1974 and 1977. In 1975, investigation of an oil film observed on Coldbrook Creek showed that a transformer being moved at the warehouse was emptied by a Westinghouse contractor. A NYSDEC report issued that year described transformer oil that was thick enough to form clumps on the creek surface. The Chemung County Health Department (CCHD) investigated and on 12 November 1975 determined that G&R Machinery of Buffalo, NY, a contractor retained by Westinghouse to support site cleanup, had discharged oil from at least two transformers onto the ground at the warehouse loading dock. Records indicate that up to four transformers were drained at four separate locations along the loading dock. A fifth transformer was dropped and damaged, releasing oil at an additional location. Westinghouse personnel stopped the contractor after an employee noticed the activity.

CCHD hypothesized that the drained oil entered a drain at the base of the loading dock and flowed into the storm sewer system. From there, it passed through an oil-water separator and discharged to a site culvert, which drained to tributaries in a wetland and then to Coldbrook Creek. CCHD performed dye testing to evaluate a hydraulic connection between the loading dock drain and Coldbrook Creek, and no dye was observed in the creek following the test. The loading dock where this release occurred was located between former Buildings 28 and 32 (**Figure 1-3**), which is located in the southwestern portion of the FFC area. CCHD collected 19 samples of oil and water in connection with the release, and oil from the six remaining transformers was also sampled. However, CCHD did not provide results for these samples (Dames & Moore, 1988). The only available result is from a culvert sample collected at Laurentian Place, in which PCBs were not detected. The volume of oil released and any associated soil impacts were not reported and is therefore unknown. Available documents discussing the Westinghouse transformer release are provided in **Appendix T**.

In June 2013, NYSDEC identified potential areas of concern at the EHS property based on historical use of the property and previous environmental investigation results. AOC-8 (Westinghouse Transformer Spill near Building 28A) was identified as an AOC and reflects the location of this initial transformer spill (**Figure 1-4**). As further discussed in Section 5.2.15, elevated PCBs in soil were observed in AOC-8.

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1.4.2 Miller Pond SPILLS Investigation

In 1995, a fuel oil sheen was observed on Miller Pond east of the EHS property. The location of Miller Pond is depicted on **Figure 1-1**. Subsequent investigation by NYSDEC between 1995 and 1998 identified petroleum-related chemicals in groundwater approximately 15 ft bgs extending from the EHS property to Miller Pond. Former fuel oil tanks that had been in the area of the current EHS Gymnasium were considered a potential source. A remedial action (NYSDEC Spill #94-16668) was completed by NYSDEC between 2000 and 2011, with installation and operation of oxygen-injection systems (OIS) to stimulate aerobic biodegradation of petroleum in subsurface soil and groundwater as follows:

- 2000–2001: 43-point OIS operated east of the EHS Gymnasium.
- 2003–2006: 24-point OIS operated in the southern portion of the EHS football field.
- 2006–2011: 17-point OIS operated northeast of the EHS building.

This SPILLS Case remains open in the NYSDEC database.

1.4.3 NYSDOH Air Investigations

Indoor Air Investigation (July 2000)

In April 2000, the Elmira City School Board received a letter from parents concerned about a perceived unusual number of cancers among students, and NYSDOH and NYSDEC committed to further investigate environmental conditions at the school. In response, NYSDOH designed an investigation to determine whether subsurface contamination was present in soil gas beneath the slab and whether indoor air was affected. Sampling was conducted on 22 and 23 May 2000 and reported on 28 July 2000. Soil gas was sampled through temporary points in the pool filter room, boiler room, and gym storage room, which were on the side of the building closest to known petroleum contamination and near mechanical equipment. Indoor air was sampled in Classrooms 127, 138, and 148 (each on a different ventilation system), the library, gymnasium, cafeteria, and gym storage room, with an outdoor sample from the courtyard. Three indoor samples and one outdoor sample were also collected at Elmira Free Academy (EFA) for comparison. All samples were collected in six-liter Summa canisters over two hours and analyzed for VOCs. NYSDOH also measured carbon dioxide, carbon monoxide, temperature, humidity, and pressure differentials between the sub-slab and the building.

The soil gas samples contained elevated Freons and chlorinated solvents (chloroform, 1,1,1-TCA, TCE, and PCE) at all three locations. TCE ranged from 14 to 325 µg/m³ and Freon 113 and chloroform exceeded 1,000 µg/m³ beneath the pool filter room. A few compounds were reported as slightly elevated, including 4-methyl-2-pentanone, n-decane and n-undecane (about twice background in the physics room), and Freon 12 (two to three times higher in the music room, library, and Room 127). The other Freons and solvents found in soil gas were not reported above background indoors. Pressure differences between the soil gas and the building were minimal (0 to 2 pascals), and the building was slightly pressurized overall. NYSDOH concluded that indoor air was not being affected by petroleum contamination beneath the school, that the results did not

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show a problem with chemical contamination in school air, and that exposure at the reported levels was not expected to be a health concern. It noted that the Freons and solvents in soil gas might be related to products used at the school, and recommended further investigation of past and present chemical use, an evaluation of HVAC outdoor air delivery, and consideration of an indoor air quality action plan consistent with USEPA guidance.

Air Investigation Update (August 2000)

In response to preliminary soil results in July 2000 that reported PCB Aroclors 1248 and 1260 in two subsurface samples near the north end of the school, NYSDOH collected five air samples for PCBs on 20 July 2000. The results of this air sampling for PCBs was reported on 22 August 2000. Indoor samples were taken in Classroom 138 and the boys' locker room, both near the PCB soil detections, and in the library, which is in the opposite wing on a different ventilation system and served as a comparison. Outdoor samples were taken at the north end of the school and in the courtyard. Samples were collected on florisil tubes over four hours using NYSDOH Method 311-1 and analyzed for Aroclors 1221, 1016/1242, 1248, 1254, and 1260 at a detection limit of 0.02 µg/m³. No Aroclors were detected in any sample, and NYSDOH concluded that PCB contamination was not found in indoor or outdoor air.

Air Investigation Update (October 2000)

At a public meeting on 23 August 2000, questions were raised about air testing in sub-grade classrooms. NYSDOH had not known that Classrooms 149 and 151 and a storage area were located below grade under the auditorium, although Room 148, served by the same air handling unit, had shown typical background results in May 2000. NYSDOH therefore sampled the basement areas on 31 August 2000 and reported the results on 18 October 2000. Samples included a soil gas point in the basement storeroom between Classrooms 149 and 151, indoor air in basement Classroom 151, indoor air in the library as a comparison, and outdoor air in the courtyard. VOCs were analyzed and PCBs were analyzed in Classroom 151 and an outdoor sample. The soil gas contained elevated Freons and chlorinated solvents, with TCE clearly above background. The measured pressure gradient was less than 0.2 pascals and TCE and the other solvents were not detected in indoor air. Several aromatic compounds in the library were up to about ten times background and were attributed to locker painting under way that day, and acetone and Freons 11 and 12 were slightly above background. No PCBs were detected in the indoor or outdoor air samples. NYSDOH concluded that the results were consistent with its earlier findings. Freons and VOCs were present in soil gas, but no measurable pressure gradient was drawing soil gas into the school, and PCBs were not present in air. It did not expect the aromatic compounds to be an acute health concern and expected them to diminish with ventilation.

1.4.4 NYSDEC Environmental Investigation and NYSDOH Health Consultation

NYSDEC conducted an environmental investigation of soil, groundwater, surface water, and sediment at EHS in 2000 (NYSDEC, 2001). NYSDOH initiated a cancer study based on a concern raised with NYSDEC from parents regarding a perceived unusual number of testicular cancers in past and present students at EHS at that time, which was brought to its attention by NYSDEC. NYSDOH evaluated all available information on cancer in students at EHS, collected indoor air

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samples from inside EHS, and issued a Health Consultation Report in September 2003 (NYSDOH, 2003). The 2003 NYSDOH Health Consultation Report, which included findings from the Agency for Toxic Substances and Disease Registry (ATSDR), stated the following:

> Based on ATSDR's public health hazard category classification, the environmental conditions at Southside High School [i.e., EHS] pose no apparent health hazard. This classification is used because average levels of contaminants in surface soils do not exceed public health comparison values. Although a few samples exceed health comparison values, people are unlikely to be exposed frequently to soil at these locations and the associated health risks are unlikely to be significant. Nevertheless, because average levels of total PCBs exceed typical background levels and average levels of carcinogenic PAHs are somewhat below the upper range of background levels, exposures to these contaminants at Southside High School may be greater than those typically experienced from soil. Students, faculty, staff and the community are not currently being exposed to subsurface soil, although it contains chemicals at levels exceeding public health comparison values. (NYSDOH, 2003).

In June 2009, ECSD prepared an Environmental Management Plan (EMP; Sterling Environmental Engineering, P.C. [Sterling], 2009) in response to a 2003 request from the State Education Department (SED) to formalize environmental management operations and practices at EHS. NYSDEC and NYSDOH provided technical assistance to SED in development and review of the EMP. The intent of the EMP was to advise construction personnel and the general community regarding the potential for exposure to COPCs that could be present in soil, groundwater, and soil vapor on EHS property. In February 2016, Unisys submitted a draft interim Site Management Plan (ISMP) for Agency review that updated the EMP and accounted for and included SC activities, IRM activities, and response actions. NYSDEC provided comments on 20 May 2019. A revised ISMP (Geosyntec, 2019c) was submitted on 19 December 2019 and approved by NYSDEC on 20 December 2019 (**Appendix A**). The ISMP remains in effect until the final remedy has been completed.

In March 2010, NYSDOH issued a Health Consultation Report (NYSDOH, 2010) that evaluated indoor and outdoor air quality as well as sub-slab vapor samples collected by ECSD in 2009 (**Appendix B**). NYSDOH concluded that exposures to concentrations of VOCs in indoor air at EHS were not expected to be harmful to human health if the actions specified in the EMP were implemented (i.e., operation of the heating, ventilation, and air conditioning [HVAC] system in a positive-pressure mode). Given detections of Freon and chlorinated solvents in sub-slab vapor at various locations beneath the building, NYSDOH recommended continued operation of the building HVAC system for positive pressurization, continued routine monitoring of differential pressures between the sub-slab and building interior, additional evaluation of indoor air quality and pressure differentials in Room 127 of EHS, and adjustments to the HVAC system in the area of Room 127 to maintain the concentration of TCE in indoor air within background. ECSD installed sub-slab vapor mitigation systems during construction of the K-Wing Science Addition in 2009, during renovation of the Gymnasium in 2010, and during construction of a cafeteria

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addition in 2013. ECSD monitored indoor air quality and pressure differentials between 2010 and 2018. Unisys then undertook indoor air quality monitoring under the ISMP in December 2019.

1.4.5 Vapor Intrusion Assessments

In June 2013, NYSDEC contacted Unisys with concerns regarding the information collected from the 2009 ECSD testing program and 2010 NYSDOH Health Consultation Report including historic demolition, construction, and facility plans provided in digital form that NYSDEC had recently received from ECSD. In response, Unisys conducted an initial assessment of HVAC operations at Room 127 of EHS in July 2013 and subsequently submitted a work plan to assess indoor air and sub-slab soil vapor in June 2014 (Geosyntec, 2014) that included a program to assess the potential for soil vapor intrusion (VI). Results were reported in the Vapor Intrusion Assessment Report (Geosyntec, 2019e). The assessment program included:

- Collection of field-based screening level data suitable for comparison with NYSDOH VI Guidance Matrices from samples of indoor air and sub-slab soil vapor;
- Collection of laboratory-based chemical data;
- Collection of high volume sampling (HVS) flow and vacuum data to assess the transmissive properties of the sub-slab fill material;
- Collection of differential pressure data to assess the impacts of operation of the school HVAC system on cross-slab air pressures; and,
- Completing a building reconnaissance to assess potential impacts of activities and materials inside the building that could influence indoor air concentrations of VOCs.

Based on sub-slab TCE and cis-1,2-DCE concentrations exceeding the 2006 NYSDOH Guidance for Evaluating Soil Vapor Intrusion Matrix 1 Mitigation concentration of 250 µg/m^3, Unisys subsequently installed a sub-slab depressurization (SSD) system in the F-Wing of the school to mitigate the VI potential in that area as described in Section 3.1.4.

1.4.6 Site Characterization

The SC Work Plan dated July 2014 and revised October 2014 was submitted to NYSDEC and described data collection activities to document environmental conditions at the Site as it relates to AOCs and historical information. Unisys expedited implementation of the SC Work Plan, including collection of indoor air quality and surface soil samples, in order to complete most field activities and obtain initial preliminary results prior to start of classes at EHS on 3 September 2014. Verification of previous analytical results in surface (0-2 inches bgs) and shallow subsurface (0.17-2 ft bgs) soils were conducted in July 2014 to confirm that COPCs did not pose an unacceptable level of risk to human health and the environment prior to the start of classes. NYSDEC and NYSDOH provided oversight and review during field activities. Preliminary, non-validated analytical results for PCBs and SVOCs in surface soils were submitted to NYSDEC and NYSDOH on 31 July 2014. Additional surface, shallow subsurface, and subsurface (greater than 2 ft bgs) soil

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investigations, groundwater investigation, and former combined storm sewer inspections for SC were conducted at the Site between August and October 2014. The SC Data Report was submitted to NYSDEC on 6 February 2015 following data validation completion on 10 November 2014 (Geosyntec, 2015a).

The SC Data Report identified PCBs, PAHs, and metals as COPCs at the Site based on comparison to Restricted Residential SCOs (6 NYCRR 375). A meeting to discuss analytical results for PCBs in soils was held on 17 March 2015 among ECSD, NYSDOH, NYSDEC, and Unisys. NYSDOH and NYSDEC presented results of an evaluation that included PCB analytical data from samples collected from 0-2 ft bgs between 2000 and 2014 and vegetative cover conditions with respect to preventing potential exposures to shallow soils. According to NYSDOH, 2014 surface soil data were consistent with surface soil data previously collected by NYSDEC/NYSDOH and did not alter conclusions or recommendations presented in the 2003 Health Consultation prepared by NYSDOH (NYSDOH, 2003). The 2003 Health Consultation also stated that well-established and maintained grass cover minimizes human exposure to soil by limiting direct contact with the soil. As a precaution, a temporary short-term response action (STRA) was undertaken by Unisys to evaluate cover systems in areas where PCBs exceed 1 milligram per kilogram (mg/kg) in surface or shallow subsurface soils at EHS and additional protective measures were implemented at certain discrete locations to prevent potential exposure to shallow soils in unpaved areas. The STRA activities began on 29 March 2015 and were completed on 3 April 2015. A report on STRA activities was submitted to NYSDEC on 15 May 2015 (Geosyntec, 2015c).

The SC Data Report included recommendations for additional delineation of PCBs in soils at select areas of the Site, including the Tennis Courts area. Between 2015 and 2017, the SC Work Plan was updated with a series of five addenda:

- **SC Work Plan Addendum #1** was submitted to NYSDEC on 22 May 2015 with responses to NYSDEC comments on 2 July 2015. Field activities for SC Work Plan Addendum #1 were conducted between 13 July and 7 August 2015. Subsurface soil borings were advanced to delineate the horizontal and vertical extent of PCBs in subsurface soils.
- A summary of field activities and analytical results for SC Work Plan Addendum #1 were presented in **SC Work Plan Addendum #2**, dated 8 January 2016, along with plans for additional delineation of PCBs in soils and evaluation of potential PCB migration in groundwater. Field activities for SC Work Plan Addendum #2 were conducted between 29 February and 24 March 2016.
- A summary of field activities and analytical results for SC Work Plan Addendum #2 were provided in **SC Work Plan Addendum #3**, dated 9 August 2016, along with plans for additional delineation of COPCs in soils and evaluation of potential PCB migration in groundwater. In response to 2 June 2015 comments from NYSDEC on the SC Data Report, other SC activities were also undertaken, including additional delineation of PCBs in soils north of the Tennis Courts area, evaluation of the depth to groundwater east of the Gymnasium, characterization of VOCs in groundwater in the vicinity of the F-Wing (part of EHS Building), and storm sewer catch basin inspection

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and sampling. Field activities for SC Work Plan Addendum #3 (Geosyntec, 2016b) were conducted between 22 August and 28 September 2016.

- A summary of field activities and analytical results for SC Work Plan Addendum #3 were presented in the **SC Work Plan Addendum #4** dated 3 February 2017, which also included plans for additional delineation of PCBs in soils within the Tennis Courts area. Field activities for SC Work Plan Addendum #4 were conducted between 6 and 16 February 2017. Review of non-validated data indicated the need for additional data collection to complete a design of IRM #1.
- Plans for additional delineation of PCBs in soils, including within the Tennis Courts area, were submitted as **SC Work Plan Addendum #5** on 16 March 2017. Field activities for SC Work Plan Addendum #5 were conducted between 20 and 24 March 2017, with modifications between 10 and 13 April 2017 and 15 and 23 May 2017.

The addenda to the SC Work Plan (Geosyntec, 2015b, 2016a, 2016b, 2017a and 2017b) focused on delineation of PCBs in soils as the driver for remedial activity to be conducted in coordination with planned capital improvements in the Main Parking Lot and Tennis Courts to be conducted by ECSD in 2017. Primary samples were collected in the Tennis Courts area to depths of 4 ft bgs based on previous detections and additional samples were collected at depths up to 8 ft bgs and held for analysis pending the results of the primary samples. Based on the results of the primary samples, samples collected at depths up to 6 ft bgs were released for analysis to provide vertical delineation. As further discussed in Section 3.2.1, soil data for PCBs collected during the SC were used to pre-delineate the IRM #1 excavations (Geosyntec, 2017d). Post-excavation confirmation samples were only required in areas beyond the IRM #1 design (Geosyntec, 2019f). Additional investigation was not conducted beneath the EHS Tennis Courts following the completion of IRM #1 and ECSD capital improvements in 2017 to avoid disturbance of the newly constructed tennis courts.

An SC Report was submitted to NYSDEC on 17 May 2017 (Geosyntec, 2017c) that described SC and remedial activities conducted to the date of the report, including completed soil investigations, groundwater investigations, in-line camera surveys, and fine-grained material collection. NYSDEC provided approval on 15 August 2018 (**Appendix A**) contingent on requested revisions. A revised SC Report was submitted that addressed the contingent issues on 28 March 2019 (Geosyntec, 2019b).

1.5 Purpose and Objectives

The objectives of this RI/AA Report are to (1) summarize SC and RI data collection and IRM activities for the Revised BCP Site; (2) delineate the areal and vertical extent to a point which allows for decision making regarding remedial actions for the Revised BCP Site; (3) identify the sources and migration pathways of COPCs and actual or potential receptors of COPCs; (4) perform a qualitative human health risk assessment; and (5) recommend remedial action objectives. These objectives are consistent with NYSDEC Division of Environmental Remediation (DER)-10 Guidance, which provides an overview of site investigation and remediation processes for NYSDEC's remedial programs administered by the DER.

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1.6 Report Organization

The following sections make up the remainder of this document:

- Section 2 describes RI and IRM pre-design investigation (PDI) data collection activities performed.
- Section 3 provides a summary of IRM and vapor mitigation activities completed during the RI.
- Section 4 describes the Site geology and hydrogeology.
- Section 5 describes the findings of the investigation of AOCs, organized by areas of the Site.
- Section 6 describes the nature and extent of Revised BCP Site-related Compounds of Concern (COCs) identified in the RI and IRM samples remaining in place.
- Section 7 assesses the potential sources and fate and transport of Site-related COCs.
- Section 8 presents the qualitative human health risk assessment conducted as part of this RI/AA Report.
- Section 9 presents the AA, an analysis of remedial alternatives for remedy selection.
- Section 10 describes the post-remedial requirements.
- Section 11 lists the references cited herein.

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2. REMEDIAL INVESTIGATION DATA COLLECTION

This section presents an overview of data collection activities performed for the RI in accordance with the RI Work Plan and subsequent addenda as well as PDIs for the design of IRMs, vapor intrusion assessments, and monitoring and sampling performed in accordance with the ISMP. The applicable documents and Agency Approvals are summarized in **Appendix A**.

Unless noted otherwise below, remedial investigation data collection was performed in accordance with the approved Quality Assurance Project Plan (QAPP)/Field Sampling Plan (FSP) included in the 2019 Revised RI Work Plan. The QAPP/FSP was updated in November 2024 and approved by NYSDEC in December 2024 (**Appendix A**). Data collection activities after 2024 were performed in accordance with the approved revised QAPP/FSP.

The following subsections describe the data collection activities grouped by media, beginning with indoor air and soil vapor, proceeding to soil, and then groundwater. This is followed by a description of the investigation of the sewer system, investigation-derived materials (IDM), and activities to evaluate data usability. Finally, deviations to the work plans are summarized.

2.1 Indoor Air, Outdoor Air, and Sub-Slab Vapor

A supplemental vapor intrusion assessment (SVIA) program was implemented between 27 and 29 June 2018 in accordance with the SVIA work plan submitted to NYSDEC and NYSDOH on 19 June 2018 (SVIA Work Plan; Geosyntec, 2018a) and approved by NYSDEC on 21 June 2018 (**Appendix A**). The SVIA was performed at the request of NYSDEC to further assess the VI potential at EHS. Previously, investigations of the VI potential at EHS had been conducted by NYSDOH (**Appendix B**), Sterling **(Appendix B**), and by Geosyntec. SSD mitigation systems have been installed by ECSD at the K-Wing, Gymnasium, Cafeteria and Cafeteria Expansion, and by Unisys at the F-Wing and Music Wing of the school to address the VI potential associated with the presence of VOCs in the sub-slab vapor and indoor air at those locations. The objective of the SVIA program was to assess areas of EHS that were not being mitigated by SSD systems to determine if further sub-slab mitigation was required. SVIA activities were documented in the SVIA Report dated 31 January 2019 and approved with contingencies by NYSDEC on 4 March 2019 (**Appendix A**). A revised SVIA report was submitted on 28 March 2019 (Geosyntec, 2019e).

Various combinations of indoor air, outdoor air, and sub-slab soil gas sampling (including conventional, high-volume, and SSD System stack sampling) were performed at a representative suite of EHS locations that were discussed with and approved by the NYSDEC and NYSDOH. The locations and sample types and the primary rationale for the specific sampling combinations are summarized in **Table 2-1.** Sub-slab soil gas samples collected during the SVIA and previous investigations are shown on **Figure 2-1**. Indoor and outdoor air samples collected during the SVIA and previous investigations are shown on **Figure 2-2A and Figure 2-2B**. These samples collected as part of the previous vapor intrusion assessment were referenced in Section 1.4 and are discussed further below in Sections 2.1.1, 2.1.2, 2.1.3, and 2.1.4.

Sample handling procedures, including sample custody and sample control, were conducted in accordance with the NYSDEC-approved QAPP/FSP developed for the 2014 VI assessment

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program and field activities were performed in accordance with the Site-specific Health and Safety Plan. These plans were included in the SC Work Plan. Associated vapor intrusion sampling forms and field documents are provided in **Appendix C**.

2.1.1 Indoor Air Samples

Indoor air samples were collected to analyze the presence of VOCs in indoor air at 17 locations in accordance with the approved SVIA Work Plan with the exception of deviations described in Section 2.7.1. Two sets of samples were collected at each location: an initial sample set was collected on 28 June 2018 over an 8- to 10-hour period (~7:30 a.m. to ~6:00 p.m.) one day after the HVAC system had been set to operate in unoccupied mode. A similar sample set was collected on 29 June 2018 starting just after the HVAC system had been set to run in occupied mode. These sampling conditions were designed to represent conditions that would resemble a Sunday and a Monday, respectively.

The locations were selected to represent the following conditions:

- Areas where SSD Systems were and are operating
  - Room 127
  - Gymnasium
  - Cafeteria
  - K-Wing
- Unmitigated Areas where TCE was previously detected in indoor air samples collected by Unisys (Room 100)
- Areas where sub-slab concentrations of Freon 12 in samples collected by Unisys in 2014 were above 3,000 micrograms per cubic meter ($\mu g/m^3$)
  - Room 104
  - Room 138A
- Areas where measured cross-slab pressure differentials between the sub-slab and building interior are approximately neutral (i.e., about +/- 1 pascal) with the building HVAC operating in building occupied mode
  - Room 139
  - Room 145
- Areas with floor cracks identified during an inspection on 11 June 2018
  - Room 103
  - Room 168
- Previously unsampled areas in the F-Wing that were presumed to be beyond the area with detected concentrations of TCE in the sub-slab
  - Room 133

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  - Room 109
- Areas where the reporting limits for TCE in the July 2014 sub-slab samples were between 60 µg/m^3 and 250 µg/m^3, the then current (2017) NYSDOH Matrix A and previous (2006) NYSDOH Matrix A criteria at which mitigation is the action recommended to address potential exposures due to VI
  - Room 120
  - Room 122
- An occupied area near an unoccupied location at which a previous NYSDOH sub-slab sample (Room 151A, August 2000) had an elevated (i.e., 170 µg/m^3) concentration of TCE but was beyond the zone of influence of an SSD System (Room 149)
- Areas not expected to represent a potential VI threat that were not previously sampled
  - Room 148
  - Room 135

2.1.2 Outdoor Air Samples

Outdoor air samples (two sets: HVAC occupied/HVAC unoccupied) were collected at the EHS roof in two locations near an air intake of the HVAC system to characterize the potential influence of background ambient air sources in accordance with the approved SVIA Work Plan. One sample was in the F-Wing in front of the air intake closest to the SSD System stack and another sample was in the roof area between the Cafeteria and the K-Wing. The samples were collected over the same time periods as the indoor air samples.

2.1.3 Sub-Slab Vapor Samples

Conventional sub-slab sampling (i.e., Summa) from temporary sampling ports was performed for Rooms 103, 109, 120, 122, 133, 135, 148, 151A, and 168 to assess the soil vapor VOC concentrations below those areas in accordance with the approved SVIA Work Plan with the exception of deviations described in Section 2.7.1.

Prior to the supplemental sub-slab vapor investigation, a building walk through was conducted with ECSD personnel to identify and mark out proposed sub-slab vapor sampling locations, HVS suction points, and nearby points which were used to measure induced vacuum during HVS testing. Before drilling any holes through the slab, the proposed locations were cleared by a utility location contractor.

An asbestos characterization program was conducted by the ECSD in 2013 (Anthony Lasorte, Elmira City School District Southside, personal communication, December 2013), and as a result ECSD had knowledge regarding the presence of asbestos-containing-materials (ACM) in the floor areas of EHS where temporary sub-slab or HVS test points were proposed. During the building walk through, ECSD officials verified that the proposed test locations were free of asbestos and ACM.

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2.1.4 High-Volume Sampling

The HVS test method consists of extracting and sampling soil vapor at a high flow rate (hundreds or thousands of liters per minute) over a set period (typically 30 to 60 minutes). The extracted soil gas is continuously monitored using portable instruments to assess the trend of vapor concentrations as a function of volume purged to infer the distribution of vapor concentrations at progressively further distances from the point of extraction (i.e., if concentrations increase with increasing volume purged, the indication is that higher concentrations are present at some distance from the point of extraction).

Depending on the leakance of the slab, the HVS test method removes sufficient volume of gas from a 6-inch gravel layer with thirty percent (30%) porosity (typical large building slab sub-grade fill) to withdraw all soil gas from the gravel layer beneath the slab within a radial distance of about 25 to 60 feet. Unlike conventional sub-slab sampling (which provides essentially a point measurement), HVS testing provides information over a broader area by removing a larger volume of soil vapor. The HVS test method also minimizes the risk of failing to identify elevated VOC concentrations that may exist between or beyond probe locations (which are often random or constrained by access limitations). The method also avoids the risk of a single small sample with an anomalously high or low concentration skewing the analysis of possible exposures and risk.

One consideration with HVS testing is the degree to which indoor air is drawn through the floor. Construction aggregate is typically placed beneath a concrete slab and is much more permeable than most natural soils and much more permeable than concrete, so the majority of flow to the HVS suction point is expected to originate from the granular fill immediately below the slab (i.e., sub-slab soil gas). Leakage of air through the floor slab is inevitable, but varies with the number and aperture of fractures, expansion joints, floor drains and other penetrations through the floor. Leakance is estimated by collecting and analyzing transient vacuum response data collected from communication test points (CTPs) over a few minutes or less, analogous to monitoring drawdown versus time at a piezometer during a groundwater pumping test. Analysis of this data using the semiconfined (leaky) aquifer model (Hantush and Jacob, 1955) provides an estimate of the transmissivity of the gravel layer and the leakance into the sub-slab gravel layer (Thrupp et al., 1996, 1998; McAlary et al., 2010).

HVS testing was performed for Room 151, Room 148, and Room 135 in accordance with the approved SVIA Work Plan with the exception of deviations described in Section 2.7.1 to provide additional characterization of VOCs in sub-slab vapor and to characterize the gas transmissivity of the sub-slab fill and the magnitude of leakance of gas across the slab. The transmissivity and leakance values were used in simple equations programmed into a fast and efficient spreadsheet tool to calculate profiles of the following:

1. Induced vacuum versus radial distance from the extraction point.
2. Induced velocity versus radial distance from the extraction point.
3. Proportion of leakage through the slab versus radial distance from extraction point.
4. Distance to which vapors are extracted versus time.

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This analysis provided useful lines of evidence for interpreting the concentration-versus-volume-purged data, but also provided critical design parameters for mitigation measures.

2.1.5 SSD System Effluent Sampling

Stack sampling was performed for the combined discharge stacks at each of the five SSD Systems (Gymnasium, K-Wing, F-Wing, Music Wing, and Cafeteria Retrofit/Addition) to assess the average sub-slab concentrations of the soil vapor being captured by those systems in accordance with the approved SVIA Work Plan. Those data were used in conjunction with stack flow measurements to calculate the mass being captured by the systems, which in turn was used to estimate the potential indoor air concentrations that could result from temporary shutdown of the systems due to fan failure or system maintenance.

2.1.6 Differential Pressure Monitoring

Cross-slab differential pressure monitoring was performed during indoor air sampling at each of the SSD Systems, at existing pressure ports in or close to rooms where indoor air samples were collected, and at existing or temporary sampling ports in rooms where sub-slab monitoring was performed (**Table 2-2**). Pressure monitoring was also performed at sub-slab CTPs installed at radial distances of 3 feet, 10 feet, and 20 feet from the extraction points during the associated HVS test.

2.2 Soil Investigation

The RI soil investigation was conducted to complement existing data collected in previous investigations discussed in Section 1.4, support the RI objectives of investigating AOCs presented in Section 1.3, and delineate the nature and extent of COPCs in soil. In total, over 1,270 soil borings consisting of over 4,700 samples were collected within Revised BCP Site #c808022 between January 2018 and December 2024, including analysis of over 3,750 samples for PCBs, 2,450 samples for metals, 1,250 samples for SVOCs, and 1,150 samples for VOCs. The 4,700 samples represent the total number of unique soil samples collected. The sample counts by analyte group represent the number of sample-analyte group analyses performed. A single soil sample may have been analyzed for one or more COPCs (e.g., PCBs, metals, SVOCs, and/or VOCs). Soil samples were collected and analyzed in accordance with the QAPP/FSP to characterize the surface interval (0-2 inches bgs), the shallow subsurface (0.17-2 ft bgs), and the subsurface (below 2 ft bgs) in 2-foot intervals to the water table; samples were also collected in some places as directed by NYSDEC and consistent with approved work plans, below the water table to the silty clay aquitard, and in select locations several feet into the clay layer. The water table across the Site generally ranges between 14-16 ft bgs. Soil sampling was conducted in accordance with the approved RI workplan and subsequent addenda and PDIs. Site-wide soil sampling for areas previously not characterized during SC and PDI activities were generally conducted on a 60 ft by 60 ft grid extending to the water table, adjusted to address nearby AOCs where applicable. To address data gaps where previous SC and PDI sampling indicated additional delineation of COPC extent was warranted, additional step-out sampling was proposed where applicable. Soil borings collected to investigate AOCs are further discussed in Section 5.

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The soil investigation was conducted in phases in coordination with PDIs to support soil removal, IRM designs, and ISMP excavations. Soil investigation phases outside of Site #c808022 are not presented below. The RI soil investigation phases and associated work plan were as follows:

- January 2018: IRM #2 Pre-Design Investigation
  - The objectives of this investigation were to define the horizontal and vertical limits of PCBs in Site soils that exceed Restricted Residential SCOs and provide waste characterization data for proper disposition of Site soils from the Rear Parking Lot area of the Site. Data collected as part of this pre-design investigation were utilized to facilitate design of the IRM in the Rear Parking Lot. Subsurface soil borings were advanced at 94 locations within the Revised BCP Site to delineate the horizontal and vertical extent of PCBs in subsurface soils and collect waste characterization data. PCBs were detected above the Toxic Substances Control Act (TSCA) level of 50 mg/kg. One subsurface waste characterization sample exceeded the RCRA toxicity characteristic threshold for lead.
- February and March 2018: Amendment #1 to the IRM #2 Pre-Design Investigation
  - This amendment proposed additional investigation to address data gaps in PCB delineation. Data collected as part of this pre-design investigation was utilized to facilitate the design of the IRM in the Rear Parking Lot. Subsurface soil borings were advanced at 44 locations within the Revised BCP Site to further delineate the horizontal and vertical extent of PCBs in shallow and subsurface soils and collect waste characterization data. PCBs were detected above the TSCA level of 50 mg/kg.
- April 2018: Amendment #2 to the IRM #2 Pre-Design Investigation
  - This amendment proposed additional investigation to address data gaps in PCB delineation. Data collected as part of this pre-design investigation was utilized to facilitate the design of the IRM in the Rear Parking Lot. Subsurface soil borings were advanced at 12 locations within the Revised BCP Site to further delineate the horizontal and vertical extent of PCBs in shallow and subsurface soils and collect waste characterization data. PCBs were detected above the Restricted Residential SCO but below the TSCA level of 50 mg/kg.
- May 2018: Amendment #3 to the IRM #2 Pre-Design Investigation
  - This amendment proposed an additional investigation to address data gaps in PCB delineation. Samples collected as part of Amendment #3 were located outside of the Revised BCP Site.
- June 2018: Amendment #4 to the IRM #2 Pre-Design Investigation
  - This amendment proposed the collection of additional information regarding the location of subsurface utilities to support the design of the IRM in the Rear Parking Lot. Soil samples were not collected as part of this phase.

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- June 2018: Amendment #5 to the IRM #2 Pre-Design Investigation
  - In order to meet IRM #2 construction milestones to turnover Phase 1 of the excavation to ECSD for construction of a bus canopy, this amendment proposed collection of 15 pre-excavation PCB confirmation samples prior to construction. PCBs were detected above the TSCA level of 50 mg/kg.
- July 2018: Football Field Complex Remedial Investigation/Pre-Design Investigation Activities
  - The objective of this investigation was to address data gaps in COPC delineation in soil in order to complete the RI and design IRM #3 to address COPCs in Site soils in the FFC. Data collected as part of this investigation was utilized to facilitate design of the IRM in the FFC. Surface and subsurface soil borings were advanced at 73 locations within the Revised BCP Site to delineate the horizontal and vertical extent of PCBs, metals, VOCs, and SVOCs and collect waste characterization data. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
- August 2018: Amendment #1 - Football Field Complex Remedial Investigation/Pre-Design Investigation Activities
  - This amendment proposed additional investigation to address data gaps in PCB delineation. Data collected as part of this investigation was utilized to facilitate design of the IRM in the FFC. Surface and subsurface soil borings were advanced at 54 locations within the Revised BCP Site to further delineate the horizontal and vertical extent of PCBs and metals in shallow and subsurface soils on the EHS property. PCBs were detected above the TSCA level of 50 mg/kg. Metals were detected above Restricted Residential SCOs.
- October 2018: Amendment #2 - Football Field Complex Pre-Design Investigation Activities
  - This amendment proposed an additional investigation to address data gaps in PCB delineation. Data collected as part of this investigation was utilized to facilitate design of the IRM in the FFC. Surface and sub-surface soil borings were advanced at 41 locations within the Revised BCP Site to delineate the lateral extent of PCBs exceedances of proposed cleanup goals and to determine excavation areas for IRM #3. PCBs were detected above the TSCA level of 50 mg/kg.
- April – May 2019: Amendment #3 - Football Field Complex Pre-Design Investigation Activities
  - This amendment proposed additional investigation to address data gaps in PCB and other COPC delineation. Data collected as part of this investigation was utilized to facilitate design of the IRM in the FFC. Surface and subsurface soil borings were advanced at 181 locations within the Revised BCP Site with samples collected for PCBs, VOCs, SVOCs, and metals. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.

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- August – September 2019: NAF Soil Investigation (Remedial Investigation Workplan)
  - The objective of this scope was to conduct soil sampling to investigate the nature and extent of Site COPCs in soil from the ground surface to the water table. Soil samples were generally collected on a 60 ft by 60 ft grid across the NAF Area. Soil samples were generally analyzed for PCBs, VOCs, SVOCs, total petroleum hydrocarbons (TPH), and metals. Surface soil samples were generally analyzed for PCBs, SVOCs, and metals. Subsurface soil samples were generally analyzed for PCBs and metals. Soil samples collected at the water table were analyzed for PCBs, VOCs, TPH, and metals. One hundred and one soil borings were advanced within the Revised BCP Site as part of this investigation. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
- November 2019: Amendment #4 - Football Field Complex Pre-Design Investigation Activities
  - This amendment proposed an extended scope of work to address data gaps in COPC delineation. Data collected as part of this investigation was utilized to facilitate design of the IRM in the FFC. Surface and subsurface soil borings were advanced at 61 locations within the Revised BCP Site. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs. Soil samples were also collected to assess the potential release of COPCs from catch basins associated with the storm sewer (AOC-3). Soil samples were collected adjacent to the downgradient side of samples CB-05, CB-09, and CB-28 where exceedances were detected in catch basin fine-grained materials. PCBs were detected above the Restricted Residential SCO adjacent to sample CB-09.
- December 2019: NAF Soil Investigation – Step Out Sampling (Remedial Investigation Workplan)
  - The objective of this scope was to conduct soil sampling to further investigate the nature and extent of Site COPCs detected in soil samples collected during the August-September 2019 NAF Soil Investigation. Soil borings were advanced at 118 locations within the Revised BCP Site with samples collected for PCBs, metals, SVOCs, and TPH. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
- January 2020: Site-wide Soil Investigation (Remedial Investigation Work Plan Update)
  - The objective of this scope was to conduct additional soil sampling to investigate the nature and extent of COPCs across the Site. This investigation focused on the area north of the Tennis Courts, the southwest portion of the Site, and the East of Gymnasium area. Shallow subsurface soil samples were generally analyzed for PCBs, VOCs, SVOCs, TPH, and metals. Surface soil samples were generally analyzed for PCBs, SVOCs, and metals. Subsurface soil samples were generally analyzed for PCBs and metals. Soil samples collected at the water table were analyzed for PCBs, VOCs, TPH, and metals. Within the Revised BCP Site 22 soil

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borings were advanced as part of this investigation. PCBs, metals, and SVOCs were detected above Restricted Residential SCOs.

- May 2020: Amendment #5 - Football Field Complex Pre-Design Investigation
  - This amendment included an additional investigation to characterize the nature of soils that were to be disturbed during construction of the temporary haul road or subsequent land restoration following IRM completion. Surface and shallow subsurface (0-1 ft bgs) soil borings were proposed at 12 locations uniformly spaced along the path of the proposed haul road to determine if PCBs and metals were detected in the shallow subsurface, along with emerging contaminants and SVOCs in 25% of samples. PCBs, Metals, and SVOCs were detected above Restricted Residential SCOs. These samples are located off-Site, outside of the Revised BCP Boundary.
- July 2020: O'Gorman Street Area Soil Sampling (Remedial Investigation Work Plan Amendment #1)
  - Soil sampling was proposed as part of the Remedial Investigation Work Plan Amendment #1 to delineate locations where Residential SCO exceedances were detected near property boundaries with residential properties on the NAF. The O'Gorman Street Area sampling was limited to on-Site areas adjacent to the residential properties in July 2020 as access agreements to off-Site residential properties were pending. COPCs investigated included metals and SVOCs. A total of nine soil borings were advanced within the Revised BCP Site as part of this investigation. SVOCs were detected above Restricted Residential SCOs.
- July – August 2020: Amendment #6 - Football Field Complex Pre-Design Investigation
  - This amendment included a proposed scope of work to investigate soils below the former grandstand area in the FFC following its removal to further evaluate COPC nature and extent. COPCs investigated include PCBs, VOCs, SVOCs, TPH, and metals. Within the Revised BCP Site, soil borings at 22 locations advanced as part of this investigation. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
- August – September 2020: Amendment #6 - Football Field Complex Pre-Design Investigation – Step Out Sampling
  - The objective of this scope was to conduct soil sampling to further investigate the nature and extent of Site COPCs detected in soil samples collected during the initial Amendment #6 sampling below the former grandstand area. Within the Revised BCP Site soil borings were advanced at 15 locations. COPCs further investigated included PCBs and metals. PCBs were detected above Restricted Residential SCOs.
- January – February 2021: Site-wide Soil Investigation (TCE Soil Investigation, and Former Slide Rail Soil Investigation)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs. COPCs investigated included PCBs, VOCs, SVOCs, TPH, metals, and emerging contaminants.

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- A soil sampling plan to evaluate TCE concentrations in soil proposed by NYSDEC by electronic mail on 1 February 2021 was completed. A total of 19 soil borings within the Revised BCP Site were advanced from 2-16 ft bgs to investigate TCE concentrations in the FFC area.
- Soils in the northern portion of the former slide rail area were excavated up to depths between 14 and 15 ft bgs. Two bottom samples collected as part of the northern portion of the former slide rail excavation exceeded the TSCA level of 50 mg/kg. As communicated to NYSDEC electronically on 17 December 2020, additional soil sampling was proposed to further evaluate the nature and extent of PCBs and metals at the former slide rail area. Notice to proceed was provided electronically by NYSDEC on 23 December 2020. A total of 17 soil borings were advanced within the Revised BCP Site from 8-38 ft bgs to investigate PCBs and metals at the former slide rail area. In total, 160 soil borings were advanced as part of the soil investigations. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs. Exceedances of the Restricted Residential or Protection of Groundwater (PoG) SCOs were not detected in the collected samples analyzed for VOCs. Soil borings that were unable to be collected in the NAF due to ongoing IRM activities were collected in July 2021.

- March – April 2021: FFC Deep Soil Investigation (Soil and Groundwater Investigation Workplan, Football Field Complex)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs below the water table in the FFC and specifically the former slide rail area. COPCs investigated include PCBs, VOCs, SVOCs, metals, and emerging contaminants. 26 soil borings were advanced as part of this investigation up to 44 ft bgs. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
- May-July 2021: NAF Deep Soil Investigation, Additional Slide Rail Delineation, Infiltration Gallery Soil Investigation, Additional AOC-19 Delineation (Soil and Groundwater Investigation Work Plan, Northern Athletic Fields)
  - The objective of the deep soil investigation scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs below the water table in the NAF. COPCs investigated include PCBs, VOCs, SVOCs, metals, and emerging contaminants. 39 soil borings were advanced within the Revised BCP Site as part of this investigation up to 44 ft bgs. PCBs were detected above the TSCA level of 50 mg/kg. Metals and SVOCs were detected above Restricted Residential SCOs.
  - Additional investigation of the former slide rail area was completed. 5 soil borings were advanced within the Revised BCP Site up to 42 ft bgs. COPCs investigated include PCBs, VOCs, and SVOCs. PCBs were detected above the TSCA level of 50 mg/kg.
  - An additional soil boring (B3930) was installed in the Shot Put/Discus Area to complete a general characterization of the stormwater infiltration area for proposed

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infiltration area. COPCs investigated include PCBs, VOCs, SVOCs, and metals. VOCs were detected above Restricted Residential SCOs.

  - Additional delineation of AOC-19 was completed. 7 soil borings were advanced within the Revised BCP Site to further investigate AOC-19. COPCs investigated included PCBs and VOCs. PCBs were detected above Restricted Residential SCOs.

- July 2021: Southern Portion of Site Investigation (Soil and Groundwater Investigation Work Plan)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs at the Southern Portion of the Site, including the Rear Parking Lot area. COPCs investigated include PCBs, VOCs, SVOCs, metals, and emerging contaminants. Two soil borings were advanced within the Revised BCP Site as part of this investigation up to 12 ft bgs. PCBs and metals were detected above Restricted Residential SCOs. Additionally, soil borings that were unable to be collected on the NAF in January 2021 due to access limitations from ongoing IRM activities were collected in July 2021.
- September 2021: Western Portion of Site Investigation (Soil and Groundwater Investigation Work Plan)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs with the Western Portion of the Site. COPCs investigated include PCBs, metals, SVOCs, VOCs and emerging contaminants. 12 soil borings were advanced within the Revised BCP Site as part of this investigation up to 56 ft bgs. PCBs, metals, and SVOCs were detected above Restricted Residential SCOs.
- October-November 2021: AOC-19 Soil Investigation
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of VOCs in soil near AOC-19. Six soil borings were advanced as part of this investigation up to 28 ft bgs. VOCs were not detected above Restricted Residential SCOs. VOCs were detected above PoG SCOs.
- June 2022: Revised Northern Athletic Field Drywell Soil Quality Verification
  - The objective of this scope was to conduct additional soil sampling to evaluate the soil quality in the vicinity of drywell locations that were to remain in place following final restoration of the NAF area. COPCs investigated include PCBs, metals, SVOCs, and VOCs. Eight soil borings were advanced within the Revised BCP Site as part of this investigation. Metals and SVOCs were detected above Restricted Residential SCOs.
- January – February 2023: Pre-Design Soil Investigation – Interim Remedial Measure #6A
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs to facilitate design of a future IRM in the Southern Portion of the Site. COPCs investigated include PCBs, VOCs, SVOCs, TPH, metals, and emerging contaminants. Five soil borings were advanced

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within the Revised BCP Site as part of this investigation. PCBs, metals, and SVOCs were detected above Restricted Residential SCOs.

- August 2024: Addendum 4 to the Soil and Groundwater Investigation Work Plan EHS Building Area (Southern Portion)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs, including PCBs, metals, and SVOCs in the on-Site Southern Portion area. Seven soil borings were advanced within the Revised BCP Site as part of this investigation. PCBs and metals were detected above Restricted Residential SCOs.
- December 2024: Addendum 6 to the Soil and Groundwater Investigation Work Plan EHS Building Area (Southern Portion)
  - The objective of this scope was to conduct additional soil sampling to further investigate the nature and extent of Site COPCs, including PCBs and select metals, in the on-Site Southern Portion area identified as part of Addendum #4. Two soil borings were advanced within the Revised BCP Site as part of this investigation. PCBs and metals were detected above Restricted Residential SCOs.

Soil borings were advanced using hand augering, direct-push technology (DPT), hollow-stem augering (HSA), or sonic drilling methods, and soil samples were collected in accordance with the QAPP/FSP. Boring logs are provided in **Appendix D.** Over 1,270 soil borings were advanced within the boundaries of the Revised BCP Site that is the subject of this RI/AA Report. Soil samples were submitted to a fixed laboratory under chain of custody in accordance with the QAPP/FSP.

The RI soil investigation included the analyses of over 6,400 samples for select COPCs consistent with approved work plans, in most cases metals, PCBs, and SVOCs. Consistent with NYSDEC requirements and approved work plans, a given percentage of samples were analyzed for a full suite of analytes, including metals, PCBs, SVOCs, VOCs, and emerging contaminants. **Table 2-3** presents a summary of soil samples collected. In addition, post-excavation confirmation soil samples were collected during soil removal during IRM and ISMP excavations. Soil cover verification samples were collected to characterize native soil cover as part of IRM #5A2. Analytical results from IRM and ISMP activities are used as part of this RI to investigate AOCs and define the nature and extent of COPCs.

2.3 Groundwater Investigation

The groundwater investigation was conducted to evaluate the nature and extent of COPCs in groundwater. The investigation used a network of 251 monitoring wells located both on and off-Site. Of these, 123 were permanent monitoring wells, 116 of which remain active, and 128 were temporary monitoring wells.

Data collection activities included logging hydrogeologic materials encountered during well installation, measuring water levels, and collecting and analyzing groundwater samples for COPCs. A hydraulic evaluation that included groundwater modeling and a groundwater mounding evaluation was completed as part of an evaluation of the feasibility of the Infiltration Gallery

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installed and used as drainage infrastructure in the EHS Northern Athletic Fields and is discussed further in Section 4.4.

Monitoring well locations are presented on **Figure 2-3**. Monitoring well information is presented in **Table 2-4**. The following sections describe the inventory of wells existing at the start of the RI, monitoring well installation, abandonment and replacement activities, water level measurements, and groundwater sampling and analysis.

2.3.1 Pre – RI Monitoring Well Inventory

Monitoring wells existed at the Site prior to the start of the RI, having been installed as part of previous investigations by NYSDEC described in Section 1. As per the RI Work Plan (Geosyntec, 2019a), existing monitoring wells were inventoried and inspected on 23 and 24 July 2019. Geosyntec attempted to locate 31 on-Site monitoring wells and 32 off-Site monitoring wells. Fourteen of the previously installed on-Site monitoring wells and nine off-Site monitoring wells were located. These twenty-three wells were gauged for depth to water and depth to bottom. Other on-Site monitoring wells were inaccessible due to IRM #3 temporary infrastructure or were found to have been demolished. Off-Site monitoring well MW-41 was located and gauged for depth to water and depth to bottom on 2 October 2019.

2.3.2 Monitoring Well Installation, Abandonment and Replacement

Monitoring well installation for the RI groundwater investigation was proposed in the following Work Plans:

The Revised RI Work Plan dated May 2019 (Geosyntec, 2019a), the RI Work Plan Update dated October 2019 (Geosyntec, Revised RI Work Plan Amendment #1 dated April 2020), *Soil and Groundwater Investigation Work Plan – EHS Building Area* dated May 2021 (Geosyntec, 2021a), *Groundwater Monitoring Network Update* dated May 2022 (Geosyntec, 2022a), *Groundwater Monitoring Network Update Addendum #2* dated March 2023 (Geosyntec, 2023a), *Groundwater Monitoring Network Update Addendum #3* dated July 2023 (Geosyntec, 2023b), and *Off-Site Groundwater Investigation Work Plan* (Geosyntec, 2025d).

The investigation rationale in the RI Work Plan Update (Geosyntec, 2019a) proposed monitoring well installation targeting relevant Site AOCs and on a roughly 120 ft by 120 ft grid in areas outside of AOCs. Throughout the course of the investigation, additional monitoring well locations were proposed to further define the extent of observed groundwater impacts. Monitoring wells were installed to investigate the shallow and intermediate zones in the uppermost sand and gravel layer, which is underlain by the silty clay aquitard. Shallow monitoring wells targeted the top of the water-bearing zone and intersected the water table. Intermediate monitoring wells screened the lower portion of the water-bearing zone where that zone was greater than 15 feet thick. Monitoring well pairs were installed such that shallow screen intervals extended to a minimum of one foot above the water table and intermediate screen intervals extended a minimum of one foot into the silty clay aquitard. The depth of the silty clay aquitard was observed to vary spatially across the Site. The monitoring well screen intervals were therefore adjusted based on the depths at which the water table and silty clay aquitard were observed in the field. Monitoring well locations are

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presented in **Figure 2-3**. Monitoring well information is presented in **Table 2-4**. Well construction logs are provided in **Appendix E-1**.

The Revised RI Work Plan Amendment #1 was submitted April 2020 (Geosyntec, 2020). As part of this work plan, 24 monitoring wells were installed in the NAF in January and February 2021. This work plan was proposed to further characterize groundwater conditions across the Site, further characterize soil at the Site (including within AOC-19), and further evaluate the former industrial sewer at the Site.

The *Soil and Groundwater Investigation Work Plan – EHS Building Area* (Geosyntec, 2021a) was submitted in May 2021. This work plan was proposed to further characterize groundwater conditions across the Site and further characterize soil at the Site. As part of this work plan, 10 monitoring wells were installed in the East of Gym area and four monitoring wells were installed east of the EHS property boundary in June 2021. Thirty-five monitoring wells were installed in August and September 2021 in the Main Parking Lot and Tennis Courts area, the Rear Parking Lot, the courtyard of the Cafeteria, and the southern service entrance. These wells are outside the Revised BCP Site Boundary but are relevant to this RI/AA Report for reporting of groundwater elevation.

The *Revised Northern Athletic Field Well Decommissioning Plan* (Geosyntec, 2022b) was submitted in May 2022 to support the construction of IRM #5A2 and NAF restoration, which required the decommissioning of seven wells (MW-49, MW-57, MW-59I, MW-59S, MW-60, MW-61, and MW-62) that would pose a potential safety risk to students during activities on the Northern Athletic Fields. These monitoring wells, with the exception of MW-49, were decommissioned in July 2022. MW-49 could not be decommissioned in July 2022 because this location was covered by haul mats necessary for IRM activities. MW-49 was decommissioned in February 2023. Previously, monitoring wells MW-50S, MW-50I, and MW-52 were decommissioned in December 2021 as part of IRM #5A2 construction. The *Addendum to the Northern Athletic Field Well Decommissioning Plan* (Geosyntec, 2023j) was submitted on 5 July 2023 and was approved as modified in a letter dated 25 July 2023 (**Appendix A**). The Addendum proposed decommissioning of MW-53 and MW-48.

The *Groundwater Monitoring Network Update* (Geosyntec, 2022a) was submitted in May 2022 and approved by NYSDEC 9 June 2022 (**Appendix A**). This work plan proposed installation of replacement wells and new wells in the NAF for use in the RI groundwater investigation as well as off-Site wells to the east and downgradient of the EHS property boundary. Five monitoring wells were installed in July 2022 in the former slide rail area, near the school entrance, and off-Site on Willys Street.

Groundwater Monitoring Network Update Addendum #2 was submitted in March 2023 with a revision in April 2023 and approved by NYSDEC 4 April 2023 (**Appendix A**). This addendum proposed the installation of an additional well pair to be incorporated into the Site groundwater monitoring network to support pre- and post-construction monitoring of the infiltration gallery, as requested by NYSDEC. Sixteen monitoring wells were installed in April 2023, including locations at which refusal was previously encountered in July 2022 as part of the initial work plan.

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Monitoring wells were installed in the FFC, in the NAF, near the school entrance, and at off-Site properties.

Groundwater Monitoring Network Update Addendum #3 was submitted in July 2023 and approved by NYSDEC 20 July 2023 (**Appendix A**). In this addendum, the location of proposed monitoring wells in the NAF were adjusted to accommodate the layout of athletic fields in the final restoration design. Eleven monitoring wells were installed in July 2023 in the NAF.

Groundwater Monitoring Network Update Addendum #4 was submitted in May 2024 and approved by NYSDEC 29 May 2024 (**Appendix A**). In this addendum, maintenance activities were proposed at MW-11S to remove a damaged and sealed PVC cap that was placed onto the well by unknown personnel and MW-34 was proposed to be retrofit with a well casing extension as MW-34 was observed to be inadvertently buried as part of IRM activities. Addendum #4 proposed evaluation of USEPA Method 6010 for thallium false positives and additional groundwater sampling to confirm the extent of COPCs in groundwater.

A *Revised Off-Site Groundwater Investigation Work Plan* was submitted on 29 April 2025 and approved by NYSDEC 3 July 2025 (**Appendix A**). The purpose of this Work Plan was to propose locations for the installation of four additional monitoring wells, groundwater sampling activities to collect additional groundwater elevation data to confirm groundwater flow direction, to further define the nature and extent of COPCs (specifically VOCs), and to confirm the off-Site attenuation of VOCs in groundwater. Four monitoring wells, MW-11I, MW-108I, MW-107S, and MW-108, were installed in July 2025. These monitoring wells were not installed within Site #c808022, but the off-Site monitoring wells are used to evaluate the nature and extent of groundwater downgradient of the Site.

There are currently 116 active monitoring wells on- and off-Site. Monitoring wells installed as part of the RI were installed and developed in general accordance with the QAPP/FSP. Monitoring well installation methods included HSA and sonic drilling. Monitoring wells were decommissioned in general accordance with CP-43 Groundwater Monitoring Well Decommissioning Policy. Abandonment forms for decommissioned historical Site monitoring wells are provided in **Appendix E-2**. A New York–licensed land surveyor collected horizontal and vertical coordinates of all installed and existing monitoring wells (State Plane NAD83 New York Central and North American Vertical Datum of 1988).

2.3.3 Synoptic Water Level Measurements

Synoptic groundwater level gauging (depth to groundwater and total well depth) of the Site-wide monitoring well network was conducted during select groundwater sampling events. The data from these gauging events was used to prepare Site-wide potentiometric contour maps to further assess groundwater flow direction and velocity. Groundwater sampling events that targeted a subset of monitoring wells (e.g. infiltration gallery monitoring events and NAF pre-decommissioning sampling event) did not include Site-wide gauging.

The current monitoring well network on the Revised BCP Site was completed in July 2023. Following the July 2023 monitoring well installation, two Site-wide synoptic groundwater gauging

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events occurred in September 2023 and April 2024. These gauging events coincided with low- and high-water level conditions, respectively. Previous Site-wide gauging events were completed in February 2021, April 2021, September 2021, and October 2021.

Low- and high-water level conditions were chosen based on an evaluation of groundwater table seasonality presented in the *Groundwater Monitoring Network Update* dated May 2022 (Geosyntec, 2022a). As presented in the *Groundwater Monitoring Network Update*, low-water level conditions occur from June to November, while high-water level conditions occur from December to May. The determination of seasonal low- and high-water level conditions for the Site was based on existing Site gauging data supplemented by gauging data from a USGS monitoring well near Horseheads, New York, approximately five miles north of the Site (Site Number: 420828076484601 - Local number, Cm-622). The USGS well is comparable to wells at the Site in both screened depth (39.2 feet bgs) and screened aquifer material (e.g., sand and gravel). The well is located near Newtown Creek, which is a tributary of the Chemung River. Monthly depth to water levels collected from the USGS well between 1987 and 2021 were downloaded from the USGS Groundwater Watch website. Based on the USGS data, the regional sand and gravel aquifer is expected to be at high-water level conditions from December to May (i.e., when the average depth to water ranges from 22.89 to 23.55 feet) and at low-water level conditions from June to November (i.e., when the average depth to water ranges from 23.88 to 24.72 feet).

Month	Depth to Water Level (ft bgs)
January	23.44
February	23.45
March	22.99
April	22.89
May	23.25
June	23.88
July	24.18
August	24.48
September	24.72
October	24.43
November	23.99
December	23.55

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Groundwater flow is inferred to be primarily easterly based on the synoptic water level readings; this supports findings of previous investigations summarized in Section 1. During the April 2024 gauging event, elevations of on-Site and off-Site monitoring wells ranged between 835.24 ft amsl at MW-26 (located relatively far to the east near Miller Pond) and 841.80 ft amsl at MW-77S (located relatively far to the west in the student parking lot along South Main Street). Groundwater elevations in the April 2024 high water table event were as expected, generally higher (average 0.27 feet higher) across the Site compared to elevations measured during the September 2023 low water table event. Seasonal groundwater level variations are minor without significant variability of potentiometric contours, suggesting stability of groundwater hydraulic conditions.

The ECSD has two wells that pump periodically to provide non-contact cooling water for EHS. Review of water levels measured with data loggers in monitoring wells near the ECSD wells (e.g., within 100 ft) at times of pumping start and stop shows that the drawdown due to pumping was up to 1.4 feet; this drawdown decreases as distance from the ECSD wells increases (**Appendix F**). Water levels recover rapidly when pumping stops. While pumping results in a transient decline in water levels in the southern part of the Site, water quality results match up with an easterly groundwater flow. This is demonstrated based on a review for TOGS groundwater standard exceedances at monitoring wells directly south and southeast of the drawdown area providing delineation to TOGS groundwater standards. If pumping were to result in a significant southeasterly flow and COPC migration pathway, one would observe TOGS groundwater exceedances along a southeasterly trend, and this is not what the water quality data show. Moreover, areas of TOGS groundwater exceedances for PCBs, VOCs, and SVOCs do not extend near the ECSD wells. Consequently, while the data demonstrates that pumping and discharge of groundwater from the ECSD wells causes local transient water level drawdown, the drawdown does not appear to be affecting areas of TOGS groundwater exceedances for PCBs, VOCs, and SVOCs.

PFAS have been detected above NYSDEC guidance values in monitoring wells in the southern portion of the Site, including wells located near the ECSD pumping wells (MW-90S, MW-90I, MW-83S, MW-83I, MW-72S, and MW-72I), and in samples of the cooling system effluent (Section 6.2). The highest PFAS concentrations are in monitoring wells on the upgradient (western) side of the Site. Concentrations generally decrease as groundwater moves across the Site. No on-Site source of PFAS has been identified.

The combination of water level and water quality data shows that the monitoring well network is well positioned to monitor the extent of TOGS groundwater exceedances at the Site including the area surrounding the ECSD wells.

2.3.4 Groundwater Sampling and Analysis

Groundwater samples were collected from the monitoring well network to characterize groundwater conditions. Groundwater samples were collected in general accordance with the QAPP/FSP using low-flow sampling protocols. Purging of the groundwater was generally performed at relatively low flow rates (between 0.1 and 0.5 liters per minute) to minimize drawdown of the surrounding water table and minimize stress on the formation. Water purged

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from the wells was monitored for the following water quality field parameters: temperature, pH, specific conductivity, dissolved oxygen, oxidation-reduction (redox) potential, and turbidity. Color, clarity, and noticeable odors were documented. Samples were collected when three consecutive readings indicated stability in the field parameters. Groundwater samples were placed in laboratory-supplied containers, placed in ice-filled coolers, and sent under chain of custody to Eurofins Test America, Inc. Groundwater samples were analyzed for COPCs including metals, PCBs, SVOCs, VOCs, and emerging contaminants. Laboratory analytical results were validated in accordance with the QAPP. Below is a summary of groundwater sampling events conducted as part of the RI to characterize groundwater across the Site.

Table 2-5 presents a summary of the groundwater sampling conducted as part of the RI groundwater investigation. Groundwater sampling logs are provided in **Appendix G**. The scope of specific sampling events is described in the following sections.

2.3.4.1 August 2018–June 2019 Groundwater Sampling

Five monitoring wells and eight temporary monitoring wells in the FFC were sampled from August 2018 to June 2019 to investigate VOC impacts observed in groundwater. The results of this investigation were presented in the FFC PDI Data Report dated September 2020 (Geosyntec, 2020b).

2.3.4.2 July 2019 Groundwater Sampling

Three monitoring wells and three temporary monitoring wells were sampled in July 2019 for emerging contaminants. This investigation was in response to a "Request for Sampling of Emerging Contaminants" letter provided by NYSDEC on 16 May 2018. MW-47, MW-11S, MW-30, and temporary monitoring wells B3088, B3089, and B3093 were sampled. In addition to emerging contaminants, samples from the monitoring wells were analyzed for VOCs, SVOCs, PCBs, and metals. The results of this investigation were transmitted via email to NYSDEC on 15 August 2019.

2.3.4.3 February 2021 Groundwater Sampling

Forty-six monitoring wells across the Site were sampled in February 2021 as per the RI Work Plan Amendment dated 22 April 2020 (Geosyntec, 2020c). Sampled monitoring wells were analyzed for PCBs, VOCs, SVOCs, metals, and TPH. Twenty-five percent of monitoring wells (12) were also analyzed for emerging contaminants.

2.3.4.4 April 2021 Groundwater Sampling

Twenty-nine monitoring wells in the NAF and FFC were sampled in April 2021 as per the RI Work Plan Amendment dated 22 April 2020 (Geosyntec, 2020c). This was the second sampling event per this work plan. Monitoring wells with an exceedance detected during the February 2021 sampling event were sampled. Sampled monitoring wells were analyzed for PCBs, VOCs, SVOCs, metals, and TPH. Twenty-five percent of monitoring wells (eight) were also analyzed for emerging contaminants.

2.3.4.5 July 2021 Groundwater Sampling

Thirty-three monitoring wells in the East of Gym area, in the FFC, and off-Site were sampled in July 2021 per the *Soil and Groundwater Investigation Work Plan – EHS Building Area* dated 19

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May 2021. Sampled monitoring wells were analyzed for PCBs, VOCs, SVOCs, metals, and TPH. Twenty-five percent of monitoring wells (eight) were also analyzed for emerging contaminants.

2.3.4.6 September 2021 Groundwater Sampling

Forty-nine monitoring wells in the south and western portions of the Site and East of Gym area were sampled in September 2021 per the *Soil and Groundwater Investigation Work Plan – EHS Building Area* dated 19 May 2021. Sampled monitoring wells were analyzed for PCBs, VOCs, SVOCs, metals, and TPH. Twenty-five percent of monitoring wells (16) were also analyzed for emerging contaminants.

2.3.4.7 October 2021 Groundwater Sampling

Thirty-five monitoring wells in the south and western portions of the Site were sampled in October 2021 per the *Soil and Groundwater Investigation Work Plan – EHS Building Area* dated 19 May 2021. Sampled monitoring wells were analyzed for PCBs, VOCs, SVOCs, metals, and TPH. Twenty-five percent of monitoring wells (nine) were also analyzed for emerging contaminants.

2.3.4.8 July 2022 Groundwater Sampling (NAF Pre-Decommissioning Sampling Event)

Seven monitoring wells (MW-49, MW-57, MW-59I, MW-59S, MW-60, MW-61, and MW-62) on the NAF were proposed to be sampled prior to decommissioning per the *Revised Northern Athletic Fields Well Decommissioning Plan dated 4 May 2022* (Geosyntec, 2022b*).* Six of these monitoring wells were sampled in July 2022 prior to decommissioning. MW-49 could not be sampled or decommissioned in July 2022 because this location was covered by haul mats necessary for IRM activities. NYSDEC agreed to exclude the requirement for low water table sampling at MW-49 to allow for decommissioning of MW-49 in early 2023, per email correspondence received 1 January 2023.

The Addendum to the Northern Athletic Field Well Decommissioning Plan (Geosyntec, 2023j) was submitted on 5 July 2023 and was approved as modified in a letter dated 25 July 2023 (**Appendix A**). The Addendum proposed decommissioning of MW-48 and MW-53. MW-48 was decommissioned on 25 July 2023. MW-48 could not be sampled prior to decommissioning as the location was found to have been in-filled with soil and required replacement. MW-53 was sampled on 4 September 2023 and decommissioned on 8 September 2024. The investigation activities completed under the approved Decommissioning Plan were documented in a Northern Athletic Field Well Decommissioning Technical Memorandum (Geosyntec, 2023i), dated 13 October 2023 approved on 17 November 2023 (**Appendix A**).

2.3.4.9 April 2023 Groundwater Sampling

Six monitoring wells were sampled in April 2023 per the *Pre-Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* dated 19 April 2023 (Geosyntec, 2023c). The monitoring wells were sampled for PCBs, VOCs, SVOCs, and metals. Data were reported in the *Revised Infiltration Gallery Pre-Construction Monitoring Report* dated 31 July 2023 (Geosyntec, 2023d).

2.3.4.10 September 2023 Groundwater Sampling

The groundwater sampling event in September 2023 accomplished objectives from three separate work plans. Twenty-nine monitoring wells were sampled per the *Groundwater Monitoring*

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Network Update Addendum #3 dated 5 July 2023 to assess groundwater during seasonally low water table conditions. Nine monitoring wells were sampled for the first Infiltration Gallery post-construction interim monitoring event per the *Post-Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* dated 26 April 2023 (Geosyntec, 2023e). In accordance with the *Groundwater Monitoring Network Update Addendum #3* (Geosyntec, 2023b), monitoring wells were sampled for PCBs, metals, VOCs, SVOCs. Twenty-five percent of monitoring wells (nine) were also analyzed for emerging contaminants. In accordance with the *Post-Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* (Geosyntec, 2023b), monitoring wells were sampled for PCBs, metals, VOCs, SVOCs and emerging contaminants.

Per the IRM #5A2 *Underground Storage Tank (UST) Removal Plan* submitted 16 August 2022 (Geosyntec, 2022c), a replacement well (MW-65R) was installed 25 ft down gradient of the UST on 27 July 2023 and sampled on 14 September 2023 as part of the September 2023 Groundwater sampling. Analytes included PCBs, VOCs, SVOCs, and metals, which included the suite of contaminants for gasoline and diesel contaminated soils in accordance with the Commissioner Policy on Soil Cleanup Guidance (CP-51) Tables 2 and 3. The results from the September 2023 groundwater sampling event were presented in the *Revised September 2023 Groundwater Monitoring Event Interim Data Report* dated 23 July 2024 (Geosyntec, 2024a) and the *Revised Infiltration Gallery Post-Construction Interim Monitoring Report 1* dated 26 April 2024 (Geosyntec, 2024b).

2.3.4.11 November 2023 Groundwater Sampling

Nine monitoring wells were sampled in November 2023 for the second Infiltration Gallery post-construction interim monitoring event per the *Post-Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* dated 26 April 2023 (Geosyntec, 2023e). The monitoring wells were sampled for PCBs, VOCs, SVOCs, metals, and emerging contaminants. Those data were reported in the *Revised Infiltration Gallery Post-Construction Interim Monitoring Report 2* dated 24 May 2024 (Geosyntec, 2024c).

2.3.4.12 January 2024 Groundwater Sampling

Nine monitoring wells were sampled in January 2024 for the third Infiltration Gallery post-construction interim monitoring event per the *Post Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* dated 26 April 2023 (Geosyntec, 2023e). The monitoring wells were sampled for PCBs, VOCs, SVOCs, metals, and emerging contaminants. Those data were reported in the *Infiltration Gallery Post-Construction Interim Monitoring Report 3* dated 24 March 2024.

2.3.4.13 April 2024 Groundwater Sampling

The groundwater sampling event in April 2024 accomplished objectives from three separate workplans. Sixty-eight monitoring wells were sampled per the *Groundwater Monitoring Network Update Addendum #3* submitted 5 July 2023 to assess groundwater during seasonally high-water table conditions. Nine monitoring wells were sampled per the *Post-Construction Monitoring Program Work Plan for Proposed Infiltration Gallery* submitted 26 April 2023 (Geosyntec, 2023e). This was the fourth and final Infiltration Gallery post-construction interim monitoring event. Fifteen wells were sampled per *Groundwater Monitoring Network Update Addendum #4*

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(Geosyntec, 2024k) submitted 3 May 2024 to further assess monitoring well locations that had previously exceeded TOGS groundwater standards or were immediately downgradient of wells where TOGS groundwater standards were exceeded. Geosyntec previously provided email communication to NYSDEC on 27 March 2024 notifying of additional groundwater samples to be collected as part of the April 2024 sampling event, prior to submittal of *Groundwater Monitoring Network Update Addendum #4.* The results from the April 2024 groundwater sampling event were presented in the *April 2024 Groundwater Monitoring Event Interim Data Report* (Geosyntec, 2024d) submitted 12 July 2024 and the *Revised Infiltration Gallery Post-Construction Final Monitoring Report* submitted 19 March 2025 (Geosyntec, 2025a). Because of additional sampling to assess conditions downgradient of TOGS exceedances, the April 2024 sampling event was the largest sampling event at the Site.

2.4 Sewer Investigation

2.4.1 Records Review

Utility drawings provided by Chemung County Sewer District (CCSD) and ECSD and historical documents from Remington Rand operations were reviewed to identify former industrial sewer utilities and active stormwater infrastructure. The FIS is AOC-2 (Pre-1979 Combined Industrial/Storm Sewer). As noted in Section 1.3.6, the FIS was used historically to discharge industrial waste from plant operations. The FIS extended to the southern Site boundary and discharged to Former Oil Skimmer #2 (OS2) located on STCC property - Site 808043 OU1. As illustrated on **Figure 2-4**, a sanitary sewer segment (Segment 1) was shown to extend from west to east across the northern end of the FFC north of the track and has two access points, MH-1 and MH-2, within or near the FFC. Former industrial sewer pipes (Segments 2 and 3) were shown to extend from north to south along the eastern edge of the FFC and two former industrial sewer pipes (Segments 4 and 5) were shown to extend northwestward from Segment 3 (**Figure 2-4**). A catch basin, CB-24, was shown at the intersection of Segments 2, 3, and 5. Segment 6 and Segment 8 are located on NSRC property, outside the extent of the Revised BCP Site to the east of Segments 2 and 3. Segment 8 was observed to have an access point at MH-40 on NSRC property.

2.4.2 Test Pitting

Test pitting was used to investigate the FIS (AOC-2) with results used along with soil and groundwater sampling results to evaluate the environmental impacts of the FIS, including potential contribution to other AOCs located in proximity to AOC-2 (i.e., AOC-3A-1, AOC-11, AOC-11A, AOC-11B, AOC-12-2). During test pitting, visual and olfactory assessment of soils was completed to evaluate potential environmental impacts. Test pit 2, 3a, and 3b were completed in December 2019 to confirm the locations of the FIS north of CB-24 (Segment 3) and of laterals that tied into the former industrial sewer (Segments 4 and 5) within the FFC. The locations of the test pits are shown on **Figure 2-4**, and test pit logs are provided in **Appendix H**. As shown, one test pit (Test Pit 2) was completed within the FFC, and two test pits (Test Pits 3a and 3b) were completed off-Site on the adjacent NSRC property. Test Pit 1 was not completed during the investigation of the FIS. Test Pit 1 was planned for a location adjacent to the northwest of CB-24 to assess the orientation of a lateral (Segment 4) previously observed to tie into Segment 3 seven ft north of CB-24. Prior to completion of Test Pit 1, the orientation of Segment 5 was determined based on

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observations at Test Pit 2 and by locating a rodder placed into Segment 5 at CB-24 and extending to Test Pit 2. Segment 5 was thus shown to extend from CB-24 to the northwest through Test Pit 2. Segment 4 was not encountered at Test Pit 2, which helped resolve its orientation as being northwestward, like Segment 5. Further, locating Segment 5 to the northwest would have required test pitting in a location occupied by the gas line and the visitor's grandstand, neither of which were practicable. Consequently, Test Pit 1 was not completed. The FIS was not identified in Test Pit 3a and subsequently Test Pit 3b was performed where the FIS was identified at 6 ft bgs. Results from the December 2019 sampling event are discussed in Section 5.2.4.

Prior to test pitting activities, a geophysical scan of the excavation areas was performed to identify buried utilities. A gas transmission line present along the FFC fence line and the former industrial sewer restricted the area where excavation could be performed as part of test pitting activities.

Following completion, the test pits were backfilled with the excavated material in reverse order of excavation. For Test Pit 2 completed within the FFC, the top 2 feet of soil was placed in a lined roll-off container staged to the south of the FFC. The top 2 feet of this excavation was backfilled with NYSDEC–approved imported fill material remaining from IRM #3. Test Pits 3a and 3b, which were not at the FFC but on adjoining NSRC property, were backfilled to ground surface with the excavated material in reverse order of excavation. The excavation areas were temporarily covered with straw. Test Pit 2 was reseeded or resodded in coordination with ECSD in spring 2020.

A possible former industrial sewer structure labeled CB-39 was identified through several lines of evidence. Initially, geophysical methods identified an anomaly near where a drywell was labelled on a historical drawing in the southeastern portion of the NAF. A DPT soil boring B3343 (**Figure 2-4**) was advanced adjacent to where the geophysical anomaly was identified. The DPT hit refusal (presumed to be the top of the drywell structure) at approximately 2 ft bgs during the initial borehole attempt. Due to the presence of a natural gas line approximately 10 feet to the west, an additional boring was advanced approximately three feet to the northeast (midway between the initial boring and the fence along the eastern border of the Site) to remain as close as possible to the structure but enable testing to the water table. Soil was logged from 6-16 ft bgs and observed to be sand with gravel. A boring log from soil boring B3343 is provided in **Appendix D**.

Test pitting was also used to locate CB-39 and to further investigate connections to CB-24 and CB-28 during IRM #5 in accordance with IRM #5 Amendment #1. The structure identified as CB-39 was exposed on 8 April 2021 and was found to be a utility vault with a duct bank and a 10-inch iron pipe. A test pit was excavated north of CB-24 on 13 April 2021. A pipe connection in Segment 3 trending northwest (Segment 4) was encountered that was consistent with Pipe 18E encountered in the IRM #5 excavation. A manhole was encountered in the IRM #5 excavation outside the fence at the northeast corner of the FFC on 15 April 2021. There was a 4-inch-diameter pipe leading south and an opening leading west. The western connection was labeled Segment 7 of the FIS, and the southern connection was identified as Segment 6, which transitions into Segment 8.

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2.4.3 Sewer Camera Surveys

Robotic closed-circuit television (CCTV) camera surveys were performed on Segments 1 and 3 within the FFC in November and December 2019 at the locations shown on **Figure 2-4** as part of the FFC RI/PDI. The surveys documented sewer and lateral orientations, construction material, condition, obstructions, and the presence of fine-grained material. An Envirosight Rovver X system was used that consisted of a six-wheeled robotic crawler with a maneuverable high-resolution video camera. In some instances, the entirety of the sewer could not be accessed by the robotic camera due to the presence of tree roots (Segment 3) and fine-grained material and gravel (Segments 1 and 3). **Figure 2-4** depicts the distance from each of the access points where robotic CCTV survey was completed. The *Subsurface Engineering Utility Project Completion Report* dated 24 January 2020 and revised 31 January 2020 (Rettew, 2020a) (**Appendix I**) further documents these robotic CCTV camera surveys.

Robotic CCTV camera surveys were performed as part of IRM #5 Amendment #1 between 12 and 19 April 2021. Additional test pitting was performed to allow additional access points for the camera survey. These test pit locations are identified on **Figure 2-4** as TP-A, TP-B, TP-C, TP-D, TP-D2, TP-E, and TP-F. A *Subsurface Engineering Utility Project Completion Report* dated 29 April 2021 (Rettew, 2021b) (**Appendix I**) further documents these robotic CCTV camera surveys.

Table 2-6 consolidates information known about each sewer segment (AOC-2) collected from camera surveys and other lines of evidence. This includes dimensions, construction materials, condition, laterals (including their location, orientation, and diameter), fine-grained material, and obstructions (e.g., debris, penetrations, and roots). The observations from the sewer camera surveys completed in 2019 and 2021 in the FFC are described below by FIS segment.

2.4.3.1 Segment 1

Two robotic CCTV camera surveys were completed from MH-1 on 5 November 2019. One survey was completed from MH-1 approximately 377 feet to the west (upstream), where it terminated at a manhole located in South Main Street (ST-6). The sewer lines formed a T, and there was no visual evidence of the sewer having been abandoned as had been indicated previously by Chemung County. A second survey was completed approximately 251 feet to the east (downstream) toward MH-2, where it terminated due to the presence of fine-grained material and gravel (approximately 30 percent of the cross-sectional area of the pipe was occluded), which prevented advancement of the camera. A *Subsurface Engineering Utility Project Completion Report* dated 24 January 2020 and revised 31 January 2020 (Rettew, 2020a) (**Appendix I**) further documents these robotic CCTV camera surveys.

Camera surveys were conducted at MH-2 and CB-28 on 12 April 2021 after inline jetting was used to clear debris. From MH-2, the camera survey proceeded to the south. The pipe was observed to be 10-inch-diameter vitrified clay. The survey was terminated after approximately 7 feet due to observed obstructions including soil and roots. From CB-28, the camera survey first proceeded to the north. The pipe was observed to be 10-inch-diameter vitrified clay and contained approximately 5% water across the vertical dimension. The survey was terminated after approximately 30 feet due to fine-grained deposits blocking approximately 90% of the opening.

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The camera survey then proceeded from CB-28 to the west. The pipe was observed to be 8-inch-diameter vitrified clay and contained approximately 10% water across the vertical dimension. The survey was terminated after approximately 4 feet due to fine-grained deposits blocking 100% of the opening.

2.4.3.2 Segment 2

Segment 2 is a 24-inch diameter segmented pipe located between CB-24 and CB-01. A camera survey was completed within Segment 2 in 2014. This survey originated in CB-24 and proceeded approximately 75 ft south/southeast towards CB-01, located within the New BCP Site. The survey terminated at an obstruction caused by a breach in the top of the sewer pipe located north of CB-01. This survey is further documented in the *Site Characterization Report* (Geosyntec, 2017c).

An additional camera survey was conducted in December 2019 where Segment 2 was excavated south of the FFC, within the New BCP Site, at Test Pit 7. The pipe was opened to facilitate insertion of a robotic CCTV camera and was observed to contain 15% of settled gravel of the pipe's vertical cross-section. From Test Pit 7, the camera survey proceeded to the north/northwest. The pipe was observed to be a 24-inch-diameter vitrified clay pipe. Over a length of approximately 13 linear feet, gravel ingress was present and obstructed approximately 65% of the pipe's vertical cross-section. At approximately 198 linear feet, the manhole for CB-24 was encountered and was observed to contain 15% of settled gravel of the pipe's vertical cross-section. A *Subsurface Engineering Utility Project Completion Report* dated 29 April 2021 (Rettew, 2020b; **Appendix I**) further documents these robotic CCTV camera surveys.

2.4.3.3 Segment 3

A camera survey was completed within Segment 3 on 6 November 2019. This survey originated in CB-24 and proceeded north (upstream) approximately 22.5 feet, where it terminated due to the presence of a large tree root that prevented advancement of the camera. This survey is further documented in *Subsurface Engineering Utility Project Completion Report* dated 24 January 2020 and revised 31 January 2020 (Rettew, 2020a) (**Appendix I**). The camera survey confirmed that Segment 3 runs north at or near the FFC fence line. This allowed for further assessment of the segment's orientation through test pitting and an additional camera survey in December 2019.

A camera survey was conducted on 22 December 2019 where Segment 3 was excavated (Test Pit 3b) to the north of CB-24, east and adjacent to the midpoint of the visitor's grandstand. The pipe was opened to facilitate insertion of a robotic CCTV camera. One survey was completed to approximately 10 feet to the north, and another to approximately 40 feet south of the opening created in the pipe. Both surveys were terminated due to the accumulation of fine-grained material and the presence of tree roots within the pipe. A *Subsurface Engineering Utility Project Completion Report* dated 29 April 2021 (Rettew, 2020b; **Appendix I**) further documents these robotic CCTV camera surveys. The camera survey, combined with the trajectory of Segment 3 confirmed through the locations of CB-24 and Test Pit 3b, showed that Segment 3 extends northward and to the west of the fence line.

A camera survey was conducted on 12 April 2021 using CB-24 as an access point. The survey confirmed a connection to IRM #5 Pipe 32 (Segment 5). The pipe was observed to be 24-inch-

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diameter vitrified clay. The survey terminated approximately four feet to the north, and an entrance to IRM #5 Pipe 18 was observed.

A camera survey was conducted on 13 April 2021 using an exposed portion of Segment 3 (TP-A) approximately 16 feet north of CB-24 as an access point. The pipe was observed to be 24-inch-diameter vitrified clay. The survey terminated approximately 36 feet to the north due to an obstruction. An access point (TP-B) was exposed approximately 39 feet to the north of TP-A to continue the camera survey, but the survey was terminated after approximately five feet due to the accumulation of fine-grained material.

The camera survey continued on 15 April 2021 through an access point (TP-C) approximately 69 feet north of TP-B. The pipe was observed to be 18-inch-diameter vitrified clay. The survey to the south terminated after approximately two feet due to obstacles and accumulated fine-grained material in the line. The survey to the north terminated after approximately 22 feet due to obstacles and accumulated fine-grained material in the line. The northern end of the pipe appeared to terminate at a vault with an opening to the west.

The camera survey continued on 19 April 2021 through an access point (TP-D) approximately 45 feet north of TP-C. The survey proceeded to the west into the FFC. The pipe was observed to be 18-inch-diameter vitrified clay. The survey terminated after approximately six feet due to an obstruction by vegetation.

2.4.3.4 Segments 7 and 8

The sections of former industrial sewer associated with the manhole encountered in the northeast corner of the FFC were labeled Segments 7 and 8, and the manhole was labeled as CB-39 since the previous structure thought to be CB-39 was determined to be a utility vault. Camera surveys of Segments 7 and 8 was completed on 15 and 16 April 2021 after the manhole CB-39 was encountered. The camera survey first proceeded west from CB-39 toward the football field (Segment 7). The pipe was observed to be 50-inch-diameter clay tile. The survey terminated at a vault approximately 25 feet upstream. The camera survey then proceeded south from CB-39 (Segment 8). The pipe was observed to be 50-inch-diameter clay tile. A hole was observed near the top of the pipe at a distance of approximately 253 feet downstream. A manhole was observed at a distance of approximately 364 feet downstream. The survey terminated after a distance of approximately 450 feet.

On 16 April 2021, the IRM contractor exposed Segment 7 and the vault upstream of CB-39. A pipe was observed to run north from the vault toward the NAF. A camera survey was conducted on 19 April 2021. The pipe was observed to be 50-inch-diameter clay tile. The survey was terminated after approximately 21 feet due to fine-grained material and observations of bentonite.

The extent of Segment 7 was not known prior to IRM #5A2. During excavation and removal of an historical rail spur on the east central portion of the NAF on 12 December 2021, a section of 36-inch terracotta piping was uncovered at 8 feet bgs running north to south and believed to be the FIS. Additional test pitting was performed on 15 December 2021 to determine the limits and provide confirmation that the terracotta piping uncovered on 12 December 2021 was the FIS.

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Several FIS laterals ranging from 6 to 18-inches were identified during IRM #5A2 prior to removal of Segment 7. Prior to removal of the Segment 7, Elk Environmental performed a camera survey on identified laterals and to determine if any additional laterals remained below the surface. The camera survey was conducted on 10 June 2022 for the following:

- A 10 to 12-inch FIS lateral identified in Area 3/Area 4 running southwest from the NAF onto the FFC (FISLATSW). An attempt was made to survey the lateral; however, the pipe was blocked approximately 4 feet into the lateral.
- The remaining section of 36-inch FIS lateral was surveyed within a section of exposed piping. The pipe was surveyed approximately 12 feet to the north and approximately 56 feet to the south. The entire length of the FIS was unable to be surveyed due to observed collapses.
- An 18-inch FIS lateral identified in Area 4 running east to west was surveyed approximately 22 feet to the west. Two additional laterals were identified during the survey (pipe 14).

Elk Environmental returned to the Site on 13 June 2022 to flush two FIS laterals. One approximately 10 to 12-inch diameter running southwest from the NAF towards the FFC (FISLATSW) and the second approximately 10 to 12-inch diameter identified as FIS-LAT1 running west towards O'Gorman Street beneath the temporary haul road. Water used to jet the pipes was flushed back onto the NAF within areas where further excavation was anticipated. The total length of survey for both pipes following flushing activities was 45 to 50 feet.

2.4.4 Catch Basin and Manhole Inspection and Sampling

The existing catch basins associated with the stormwater drain within the FFC were inspected for condition and presence of fine-grained material. A total of 20 catch basins and three manholes (**Figure 2-4** and **Table 2-7**) were assessed in May and June 2019 for accumulated fine-grained material, dimensions including pipe invert depth, condition, and construction. The depth of fine-grained material at each sampling location was measured, to the extent practicable, and recorded. At 17 catch basins, fine-grained material in sufficient quantity for sampling was observed. At these locations, a hand auger was extended from ground surface to retrieve a sample from the bottom of each catch basin. The recovered material was homogenized and placed in laboratory-provided sample containers in accordance with the QAPP/FSP. Samples from two catch basin locations (CB-05 and CB-09) had shown elevated COPC concentrations during the SC (2015). At these locations, a soil boring was advanced, and samples collected corresponding with the base of the catch basins. Soil borings B2976 and B2977 were advanced at locations adjacent to CB-05 and CB-09, respectively, as shown on **Figure 2-4.** The soil borings were advanced within approximately two feet of the downgradient side of the catch basin. Samples from the catch basins and from the two soil borings listed above were analyzed for PCBs, metals, and SVOCs. Boring logs are provided in **Appendix D**.

Fine-grained material was sampled from manholes MH-1, MH-2, and MH-3 along Segment 1 in May 2019, November 2019, and December 2019, respectively (**Figure 2-4**). The samples were

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collected using a hand auger and analyzed for PCBs, metals, and SVOCs. Data associated with this sampling event is further discussed in Section 5.

2.5 IDM Management

Solid IDM included disposable personal protective equipment, disposable sampling equipment, and excess soil cuttings from soil sampling and well installation. Liquid IDM included water generated during decontamination of field equipment and purged groundwater. IDM drums were placed within secondary containment and were not stored directly on the soil cover or ground surface. Generated IDM was staged in U.S. Department of Transportation–approved containers, sampled and characterized for waste characteristics as necessary, profiled for waste facility acceptance, and then transported off-Site by a licensed waste transporter with a valid New York State Part 364 waste transporter permit for proper disposal. IDM was transported with the required manifest, labeling, and placarding in accordance with state and federal regulations. As each permitted disposal facility has its respective permit and corporate and regulatory requirements, and to inform as to identification criteria in 40 Code of Federal Regulations (CFR) Parts 261 and 761.3; the IDM was tested for a variety of analytes, as required by the disposal facility. IDM waste characterization analyses generally consisted of the following:

- Toxicity Characteristic Leaching Procedure (TCLP) and/or Total VOCs (U.S. Environmental Protection Agency [USEPA] Method 8260).
- TCLP and/or Total SVOCs (USEPA Method 8270).
- TCLP and/or Total Pesticides (USEPA Method 8081).
- TCLP and/or Total Herbicides (USEPA Method 8151).
- TCLP and/or Total Resource Conservation and Recovery Act (RCRA) Metals (USEPA Method 6010, or 6020, or 6021 and 7470 or 7471).
- PCB Aroclors (USEPA Method 8082).
- pH (USEPA Method 9045 or 9040).
- Ignitability (USEPA Method 1010, or 1020 or 1030).
- Total Cyanide (USEPA Method 9014 or 9012).
- Total Sulfide (USEPA Method 9034 or 9030).

The IDM was stored in a manner that protected Site personnel, the public, and the environment in accordance with applicable federal, state, and local laws and regulations and approved work plans.

2.6 Data Usability

Analytical data packages generated by the fixed laboratories were validated by Geosyntec. Copies of the analytical reports are provided in **Appendix J**. Analytical data packages were reviewed for completeness, field and laboratory quality control (QC) sample results were evaluated, any significant laboratory control problems were assessed, and data qualifiers were assigned. Geosyntec validated the analytical data in accordance with the governing work plan and associated

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QAPP/FSP to verify and validate the usability of those data. Verification and validation were based on completeness and compliance checks of sample receipt conditions, both sample-related and instrument-related QC results, recalculation checks, and review of actual instrument outputs. The data were found to be usable, except as noted specifically in the tables of this report. Data Usability Summary Reports are provided in **Appendix K**.

2.7 Deviations from RI Work Plan

2.7.1 SVIA Work Plan

Most of the sampling took place at the locations proposed in the SVIA Work Plan, but in a few cases, the sampling locations were changed as follows:

- Indoor air, sub-slab, and HVS testing was performed in Room 148 rather than in Room 148D to facilitate implementation of the HVS test.
- Sub-slab and HVS testing were performed in Room 151A (storage room) as proposed. To better evaluate potential risk to human health, the associated indoor air sample was collected in Room 149 (adjacent lecture hall), as Room 149 is routinely occupied and Room 151A is not.
- Indoor air and sub-slab sampling were performed in Room 168, not Room 164A. The Room 168 location had been selected in consultation with the NYSDEC during a building walkthrough on 11 June 2018, but the wrong room number (Room 164A) was inadvertently included in the SVIA Work Plan.
- HVS testing was performed at Room 135 rather than Room 133 because Room 135 location was in the proximity of the boiler room where TCE had previously been detected in the sub-slab. That change was made in consultation with NYSDEC and NYSDOH prior to submission of the SVIA Work Plan but was inadvertently omitted from the SVIA Work Plan.
- Differential pressure measurements were obtained during each indoor air sampling event, but due to logistical practicalities they were obtained not at the beginning and end of each event as specified in the SVIA Work Plan.

These changes in scope did not compromise the adequacy or usability of the data.

2.7.2 IRM #2 PDI

IRM #2 PDI activities were performed in accordance with the IRM #2 PDI Work Plan. Field conditions precluded some of the intended work scope from being performed. A brief description is provided below.

When soil boring refusal was initially encountered, two step-off borings were performed to achieve target depth. However, if refusal was still encountered, the boring was terminated at the refusal depth. The following samples encountered refusals:

- SSHS-B159 at 8-10 ft bgs
- SSHS-B837 at 6-8 ft bgs

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- SSHS-B844 at 12-14 ft bgs
- SSHS-B846 at 10-12 ft bgs
- SSHS-B847 at 8-10 ft bgs
- SSHS-B849 at 8-10 ft bgs
- SSHS-B853 at 6-8 ft bgs
- SSHS-B875 at 6-8 ft bgs
- SSHS-B890 at 12-14 ft bgs
- SSHS-B897 at 8-10 ft bgs
- SSHS-B906 at 8-10 ft bgs
- SSHS-B912 at 8-10 ft bgs
- SSHS-B921 at 6-8 ft bgs
- SSHS-B922 at 4-6 ft bgs
- SSHS-B956 at 10-12 ft bgs
- SSHS-B963 at 8-10 ft bgs
- SSHS-B979 at 12-14 ft bgs
- SSHS-B994 at 8-10 ft bgs
- SSHS-B995 at 6-8 ft bgs

2.7.3 FFC PDI

FFC PDI activities were performed in accordance with the FFC PDI Work Plan and subsequent addenda. Field conditions precluded some of the intended work scope from being performed. A brief description is provided below.

2.7.3.1 Soil Boring Refusal

When refusal was initially encountered, two step-off borings were performed to achieve target depth. However, if refusal was still encountered, the boring was terminated at the refusal depth. Refusals were most often associated with concrete or brick debris. Boring refusal was encountered at 34 locations throughout the FFC, ranging in depths from 2-12 ft bgs.

2.7.3.2 Robotic CCTV Survey Limitations

Inline camera surveys were performed in Segment 1 (12-inch concrete storm sewer) and Segment 3 (24-inch concrete former industrial sewer) as part of PDI activities. In some instances, the entirety of the sewer could not be accessed by the robotic camera due to the presence of tree roots (Segment 3) and fine-grained material and gravel (Segments 1 and 3).

2.7.3.3 Test Pit 1

Test Pit 1 was planned for a location adjacent to the northwest of CB-24 to assess the orientation of a lateral (Segment 4) previously observed to tie into Segment 3 at a location 7 feet north of CB-24. Prior to completion of Test Pit 1, the orientation of Segment 5 was determined based on observations at Test Pit 2 and by locating a rodder placed into Segment 5 at CB-24 and extending to Test Pit 2. Segment 5 was thus shown to extend from CB-24 to the northwest through Test Pit 2. Segment 4 was not encountered at Test Pit 2, which helped resolve its orientation as being northwestward, like Segment 5. Further, locating Segment 5 to the northwest would have required

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test pitting in a location occupied by the gas line and the visitor's grandstand, neither of which were practicable. Consequently, Test Pit 1 was not completed.

2.7.3.4 VOC Sample Collection

Soil cores were visually inspected and screened with a photoionization detector (PID) equipped with an 11.7 electron-volt lamp as part of the Site's FSP, dated September 2018. As per the FSP, soil intervals with PID readings of 10 parts per million (ppm) or greater were to have a grab sample collected via TerraCore Sampling Kit for VOC analysis.

Readings exceeding the screening criteria of 10 ppm were noted at 160 soil boring locations, primarily from soil investigation performed prior to the FSP (dated September 2018). These soil borings were investigated for the presence of PCBs in soil, and PID readings were collected as a proxy to evaluate for the presence of volatile organics. After the FSP, 13 soil borings were installed where PID readings greater than 10 ppm were observed (ranging from 10.4 ppm to 34.5 ppm). VOCs samples were not collected from subsurface soil at 10 of these locations. As described later in the report, VOCs were not detected above Restricted Residential SCOs in 101 subsurface soil samples collected for the FFC PDI. Based on the data set collected for VOCs in soil, the lack of VOC data from those 10 soil boring locations is not considered a data gap for this investigation.

2.7.4 Groundwater Monitoring Network Update – Addendum #3

The following is a list of deviations from Work Plan A3 that resulted from unforeseen Site conditions as described below:

- MW-11S, MW-12, MW-13, MW-17, MW-33, MW-53, MW-87I, MW-88S, and MW-90S/I were not gauged contemporaneously with the other wells used for developing groundwater elevation contours. MW-11S and MW-17 were observed to be damaged, MW-12, MW-87I and MW-88S were buried within the mulch bed east of the gymnasium and required a surveyor and use of a mini-excavator to assist in accessing the wells for gauging on 15 September 2023. MW-13 was incorrectly assumed to be dry, as a bailer inside the monitoring well prevented depth to water measurements. MW-33 was unable to be located. As mentioned in Section 2.3.4.8, MW-53 was sampled and abandoned prior to the September site-wide groundwater monitoring event. MW-90S/I were inadvertently not gauged contemporaneously with the other wells. This well pair was gauged on 20 September 2023.

- MW-4 and MW-34 could not be sampled. MW-4 was observed to be in-filled with gravel, and MW-34 could not be located. There are existing groundwater analytical data for MW-4 and MW-34. MW-4 was installed in the late 1990s by a contractor to the NYSDEC as part of a subsurface assessment conducted in response to an oil sheen observed in Miller Pond. Given its location downgradient from monitoring well pair MW-101S/I, and availability of historical data, continued monitoring of MW-4 was not considered to be warranted. Monitoring well MW-68 was installed as a replacement well for MW-34 at a location outside of the IRM limit of disturbance. MW-34 was inadvertently buried as part of IRM activities and was later located.

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2.7.5 Groundwater Monitoring Network Update – Addendum #4

The following is a list of deviations from Addendum #4 that resulted from unforeseen Site conditions as described below:

- MW-4, MW-11S, MW-13 MW-17, and MW-34 were not gauged contemporaneously with the other wells used for developing groundwater elevation contours. MW-4 was observed to have been in-filled with gravel to ground surface. MW-11S was observed to be damaged and sealed with a PVC cap that was placed onto the well by unknown personnel. MW-13 was incorrectly assumed to be dry, as a bailer inside the monitoring well prevented depth to water measurement. The steel protective casing of MW-17 was observed to be bent. MW-34 was inadvertently buried as part of IRM activities and was located after the contemporaneous Site-wide gauging event.

- MW-30 ran dry upon initial sampling, consistent with past sampling events. This monitoring well location was allowed to recharge prior to sample collection. Due to low inconsistent recharge, monitoring purge water for stabilization parameters was not feasible at this location. Therefore, a purge log for MW-30 was not included in the IDR. MW-30 was also observed to have elevated turbidity. Due to the elevated turbidity, a filtered sample was collected for analysis of PCBs in addition to an unfiltered sample. A filtered sample was not collected for metals.

2.7.6 Soil Cover System

The following is a list of sample locations exceeding Restricted Residential SCOs within the soil cover system. These samples are discussed further in Section 6.3.

Northern Athletic Fields

- Metals (mercury at 0.95 mg/kg) at FL-S225 from 0-2 ft bfg near South Main Street. Soils were left in place at this location due to the presence of a historic concrete wall and adjacent subsurface utilities. This exceedance was submitted to the Agency on 31 August 2022 in the "Florida Central" completion package and was approved to remain in place by NYSDEC on 7 September 2022.
- PCBs (1.01 mg/kg) and SVOCs (1.1 mg/kg benzo(b)fluoranthene) at sample location SLT-S89-BOT1 at 1.42 ft bfg. This is a bottom sample from the ISMP excavation to extend the water line from Field House #1 to a fire hydrant.
- SVOCs at DUP-1-20210701 (parent sample SSHS-B4018-SUB-2-4). DUP-1-20210701 exceeded the Restricted Residential SCO for Benzo(b)fluoranthene (1 mg/kg) at 1.1 mg/kg and Indeno (1,2,3-cd)pyrene (0.5 mg/kg) at 0.58 mg/kg. DUP-1-20210701 remains in place from 1.73-3.73 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.27 ft, the current sample depth below final grade is 1.73-3.73 ft. This sample was collected along the BCP Site Boundary, adjacent to off-Site properties.
- Exceedances above Restricted Residential SCOs along the BCP property boundary were identified during Addendum 8 Phase 3 through Phase 7. Multiple samples collected during

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Addendum 8 Phase 3 through Phase 7 are located off-Site beyond the Revised BCP Site Boundary. As presented in the Off-Site Area Norfolk Southern Investigation Work Plan Addendum #1 – Interim Data Report (Geosyntec, 2026h) submitted 27 February 2026 (NYSDEC review pending), select Restricted Residential SCO exceedances for metals on the NSRC property are not attributable to on-Site sources. Further assessment of the nature and extent of soil contamination on NSRC property will be completed as part of the ongoing off-Site RI

Football Field Complex

- PCBs at sample locations IRM4-S021 (9.67 mg/kg) at 0.75 ft bfg and IRM4-S183S (4.86 mg/kg) at 1.65 ft bfg. These samples are located at the south side of the FFC, adjoining the high school building, but below a sidewalk (hardscape cover).
- PCBs at sample locations SSHS-ISMP-ES-S4 (1.047 mg/kg) at 1.72 ft bfg and B3472 (1.78 mg/kg) at 0.17-2 ft bfg. These samples are located below the sidewalk (hardscape cover) on the western side of the FFC.
- SVOCS at ISMP-EUR-BOT1 (0.53 mg/kg indeno(1,2,3-cd)pyrene) at 1.61 ft bfg. This is a bottom sample from the ISMP excavation to extend the water line from Field House #1 to a fire hydrant.
- SVOCs at SSHS-ISMP-ES-B7 (0.55 mg/kg indeno(1,2,3-cd)pyrene) at 1.89 ft bfg. This sample is located below the sidewalk (hardscape cover) on the western side of the FFC.
- SCV sampling of imported topsoil and structural fill in the FFC detected arsenic above Restricted Residential SCOs at IRM5-SCV17 (57 mg/kg) at 1-2 ft bfg, IRM5-SCV20 (21J mg/kg) at 1-2 ft bfg, IRM5-SCV4 (20 mg/kg) at 0.17-1 ft bfg, IRM5-SND-SCV3 (21J mg/kg [duplicate concentration 44 mg/kg]) at 1.58-2.026 ft bfg. SVOCs were detected above Restricted Residential SCOs at IRM5-SCV17 at 0.17-2 ft bfg for benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno (1,2,3-cd)pyrene.

Main Parking Lot and Tennis Courts

- PCBs at PS-FD-14 (1.07 mg/kg) at 0-2 ft bfg. The parent sample, SSHS-B759-SUB-0-2, had detection of total PCBs of 0.45 mg/kg (**Table 6-2A**). This sample is located beneath the hardscape cover of the Tennis Courts.
- SVOCs at SSHS-B78 (1.2 mg/kg benz(a)anthracene, 1.1 mg/kg benzo(a)pyrene, 1.3 mg/kg benzo(b)fluoranthene, and 0.97 mg/kg indeno(1,2,3-cd)pyrene) at 0.17-2 ft bfg. This sample is located under the asphalt student parking lot.
- SVOCs at SSHS-B81 (1.4 mg/kg benz(a)anthracene, 1.9 mg/kg benzo(a)pyrene, 2.3 mg/kg benzo(b)fluoranthene, 0.45 mg/kg dibenz(a,h)anthracene, and 1.8 mg/kg indeno(1,2,3-cd)pyrene) at 0.17-2 ft bfg. This sample is located under the asphalt student parking lot.
- SVOCs at SSHS-B84 (0.64 mg/kg indeno(1,2,3-cd)pyrene) at 0.17-2 ft bfg. This sample is located under the asphalt student parking lot.
- SVOCs at B4168 (1.7 mg/kg benz(a)anthracene, 2 mg/kg benzo(a)pyrene, 2.8 mg/kg benzo(b)fluoranthene, 0.5J mg/kg dibenz(a,h)anthracene, and 2 mg/kg indeno(1,2,3-cd)pyrene) at 0.17-2 ft bfg. This sample is located under the asphalt student parking lot.

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- SVOCs at IRM3-PIPE20 (5.7 mg/kg benz(a)anthracene, 4.7 mg/kg benzo(a)pyrene, 6.6 mg/kg benzo(b)fluoranthene, 6.5 mg/kg chrysene, 1 mg/kg dibenz(a,h)anthracene, and 1 mg/kg indeno(1,2,3-cd)pyrene) and metals (arsenic at 47 mg/kg, chromium at 170 mg/kg, copper at 840 mg/kg, lead at 630 mg/kg) at 0.58 ft bfg. This sample was left in place to allow backfilling and restoration of the IRM #3 excavation prior to the 2019-20 school year. This sample is located under the asphalt student parking lot.

Rear Parking Lot

- PCBs (8.12 mg/kg) at SSHS-B854-SUB-2-4. SSHS-B854-SUB-2-4 remains in place from 1.93-3.93 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.07 ft, the current sample depth below final grade is 1.93-3.93 ft. This sample is located under the asphalt parking lot.
- PCBs (2.7 mg/kg) at SSHS-B133-SUB-2-4. SSHS-B133-SUB-2-4 remains in place from 1.94-3.94 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.06 ft, the current sample depth below final grade is 1.94-3.94 ft. This sample is located on the Revised BCP boundary and will be addressed as part of the #c808054 RI.
- PCBs (5.58 mg/kg) and Arsenic (24 mg/kg) at SSHS-B3824-SUB-0.17-2. This sample is located on the Revised BCP boundary and will be addressed as part of the #c808054 RI.

2.7.7 AOC Investigations Beneath EHS Building

Direct investigation of subsurface soil beneath the EHS Building was not completed due to the physical constraints which made drilling within the building impracticable and unsafe. Specifically, interior ceiling heights do not provide adequate vertical clearance for conventional drill-rig masts, while drill-rig exhaust, limited ventilation, and amplified noise within the enclosed building present additional operational and occupational-safety constraints. Consequently, the nature and extent of COPCs in soil beneath portions of the building footprint, including several historically identified AOCs, have not been directly characterized. This limitation was addressed to the extent practicable using multiple lines of evidence, including available historical soil data, sub-slab vapor sampling, and groundwater data collected within or downgradient of the AOCs. The final SMP will include provisions for additional investigation of these AOCs beneath the EHS Building if the building or portions of the building are demolished or areas otherwise become accessible.

2.7.8 Technical Impracticability

IRM #2 (Rear Parking Lot)

IRM #2 was conducted between 22 June and 25 October 2018 in accordance with the Revised Final IRM #2 Work Plan (13 July 2018; approved by NYSDEC 25 July 2018 [**Appendix A**]) and its amendments. During excavation, concrete foundations and structures were encountered at depths that prevented installation of the planned sheet pile walls adjacent to the EHS building and the electrical and natural gas utility corridor (**Appendix N**). These subsurface obstructions

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included concrete piers, blocks, building walls, and foundation slabs. An estimated 553 cubic yards of slab material and 240 cubic yards of concrete wall and pier material were infeasible to remove.

Soil removal could not be completed safely and within the schedule needed to return the area to ECSD for capital improvements. The field program duration was not reduced by these encountered obstructions. Benching and sloping were used in place of sheet piling. As a result, impacted soils adjacent to and below energized utility lines could not be safely removed. These changes were presented in Amendment #2 and approved by NYSDEC.

Excavations were completed up to 14 ft bgs. An estimated 12,167 of 13,938 cubic yards (87 percent) of soil was removed. Confirmation samples were collected on sloped sidewalls and on top of and adjacent to the concrete structures left in place. Demarcation layers of geotextile fabric and orange netting were placed at the base of excavations where design limits could not be reached before backfilling. PCBs above TSCA levels and metals with the potential to exhibit the characteristic of toxicity remain between 2 and 14 ft bgs, below a minimum of two feet of soil cover. This material is technically impracticable to access because of its proximity to utilities and historic foundations. These conditions were documented in the IRM #2 CCR (submitted 18 March 2019; approved 30 April 2021 [**Appendix A**]). Residual soils are discussed in Section 6.3.4.

FFC IRMs (IRM #4, IRM #4A, and IRM #5)

IRM #4 and IRM #4A were conducted in accordance with the Final (100%) IRM #4 Work Plan (approved with modifications 28 May 2020) and Amendment #1 (approved with modifications 18 September 2020). IRM #5 was conducted in accordance with the Final (100%) IRM #5 Work Plan (conditionally approved with modifications 4 December 2020) and its amendments. Excavations were completed up to the water table (approximately 16 ft bgs). PCBs and metals were left in place below the water table due to the technical impracticability of excavating and dewatering soils. PCBs were also left in place due to a required offset between the slide rail excavation support and the EHS building foundation that was required to maintain building structural integrity.

PCBs at or above TSCA levels remain at IRM4-S124, IRM4-S124N2, IRM4-S147, and IRM4-S171 (approximately 9 to 14 ft bfg) due to the required building offset (**Appendix P**). PCBs at or above TSCA levels also remain in place from 14 to 38 ft bfg, primarily near the former slide rail area, because they are at or below the water table. A completion package was submitted to NYSDEC on 27 May 2021, and NYSDEC authorized backfilling on 28 May 2021. Residual soils are discussed in Section 6.3.2.

NAF IRM (IRM #5A2) and Historic Concrete Wall

IRM #5A2 was conducted in accordance with the Revised Amendment #2 to the IRM #5 Work Plan (approved with modifications 22 October 2021). Excavations were completed up to the water table (approximately 16 ft bgs). PCBs and VOCs remain below the water table, primarily near AOC-19. These soils were not removed because excavating soils at and below the water table is technically impracticable. Residual soils are discussed in Section 6.3.1.

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A historic concrete wall was observed during excavation on the NAF near South Main Street (**Appendix N**). This wall and adjacent subsurface utilities prevented complete excavation at sample location FL-S225. A mercury exceedance of the Restricted Residential SCO (0.95 mg/kg versus 0.81 mg/kg) remains at 0-2 ft bfg, within the IRM #5A2 soil cover system. The exceedance was submitted to NYSDEC on 31 August 2022 in the "Florida Central" completion package. NYSDEC approved it to remain in place on 7 September 2022.

Excavation was also not feasible at sample A3-S412, along the NAF/FFC boundary. The safety netting pole foundations (suspected depth of approximately 6 ft bgs) could not be disturbed without affecting their integrity. TCLP samples were collected to document that the soil was non-hazardous. This was provided to NYSDEC on 31 August 2022, and NYSDEC approved leaving the soil in place on 15 September 2022.

Soils remaining in place will be managed under the ISMP and the future SMP. The groundwater monitoring program in the SMP will evaluate the effect of residual PCBs and VOCs below the water table.

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3. PRE-BCP MITIGATION, POST-REMEDIAL SYSTEM SAMPLING, AND INTERIM REMEDIAL MEASURES

Summaries of pre-BCP mitigation, post-remedial system sampling, and each IRM and corrective measure are presented in the following sections. A summary table of IRMs performed including start and end dates and total soils removed is provided in **Table 3-1**. A summary of subsurface action levels associated with each IRM is provided in **Table 3-2**.

3.1 Vapor Mitigation

Vapor mitigation systems were installed by ECSD to protect indoor and outdoor air quality as a result of sub-slab vapor sample data collected in 2009, data presented in the 2003 NYSDOH Health Consultation Report (NYSDOH, 2003), and recommendations in the Indoor Air Quality Action Plan included in the EMP (Sterling, 2009). ECSD installed sub-slab vapor mitigation systems during construction of the K-Wing Science Addition in 2009, during renovation of the Gymnasium in 2010, and during construction of a cafeteria addition in 2013. Unisys installed a vapor mitigation system in the F-Wing in 2014 following the Vapor Intrusion Assessment (Geosyntec, 2019d) and in the Music Wing in 2018 following the SVIA (Geosyntec, 2019e). Vapor mitigation system locations are shown on **Figure 3-2**. ECSD monitored indoor air quality and pressure differentials between 2010 and 2018 under the EMP. Unisys then undertook indoor air quality monitoring as part of ISMP post-remediation monitoring in December 2019.

3.1.1 K-Wing Science Addition

A sub-slab vapor mitigation system was installed as part of the construction of the 12,000 square foot K-Wing Science Addition on the east side of the EHS building in 2009. The system design is described in the Soil Vapor Mitigation Design Plan prepared by Sterling in February 2009 for ECSD and revised in April 2009 (Appendix 4C of the EMP, Sterling, 2009). The vapor mitigation system consists of an SSD system and a vapor barrier. The SSD system consists of a gas permeable layer consisting of a minimum of six inches of crushed stone or crushed gravel. A collection plenum is installed in the gas permeable layer consisting of a 40-inch square void, the full thickness of the stone layer. The plenum is formed with six 8 by 8 by 16-inch concrete blocks. The soil gas and vapors enter the plenum space unobstructed, then enter a six-inch diameter solid wall fiberglass reinforced plastic pipe. This six-inch diameter duct is connected by means of wet lay-up joints to a 90-degree elbow connected to a vertical riser passing through the slab, the interior of the addition and the roof of the addition. A U-tube pressure manometer is placed in this riser so that the vacuum exerted by the fan will be evident at the manometer whenever the fan is operating normally. A fan is mounted above the roof at the termination of the riser to create negative pressure through the duct and system beneath the concrete slab. The exhaust is 44-inches above the roof of the building, is located above all eaves, is at least 15 feet above ground level, is at least 10 feet away from air intakes, is at least 10 feet from any openings that are less than two feet below the exhaust point, and is more than 10 feet from the adjoining EHS Main Building.

The vapor barrier consists of 6 mil polyethylene sheets overlapping a minimum of 12 inches with Sikaflex-1A sealant applied a minimum of 4 inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

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The K-Wing SSD system is designed to operate without regular maintenance or monitoring. The system blower is connected to the school district central monitoring system which will alert district personnel if the blower fails. If a blower failure or other problems with the SSD system occurs, the school district has been instructed to alert Unisys for repair. See "Operations and Maintenance Plan" in Section 10.2.3 for further details.

3.1.2 Gymnasium

A sub-slab vapor mitigation system was installed in the EHS Gymnasium as part of a remodeling project conducted in 2010 (Sterling, 2011). The vapor mitigation system consists of a vapor barrier and an SSD system. The Gymnasium SSD consists of a stone gas permeable layer with a plenum constructed of concrete blocks within the permeable layer and a vent duct. The vent duct rises from the plenum and is connected to the exhaust fan that creates negative pressure within the permeable layer. The vapor barrier consists of Stego Wrap™ 10 mil polyolefin sheets overlapped a minimum of 12 inches with Sonoclastic™ NP1 caulk applied a minimum of 4 inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

3.1.3 Cafeteria and Cafeteria Addition

A sub-slab vapor mitigation system was installed as part of construction of an addition to the EHS cafeteria in 2013 (Sterling, 2014). The vapor mitigation system consists of a vapor barrier and a SSD system. The Cafeteria Addition SSD consists of a stone gas permeable layer with a plenum constructed of concrete blocks within the permeable layer and a vent duct. The vent duct rises from the plenum and is connected to the exhaust fan that creates negative pressure within the permeable layer. The vapor barrier consists of Stego Wrap™ 10 mil polyolefin sheets overlapped a minimum of 12 inches with Sonoclastic™ NP1 caulk applied a minimum of 4 inches wide between the overlaps. Polyethylene sheets are sealed to the pile caps with the same sealant.

3.1.4 F-Wing

A sub-slab vapor mitigation system was installed in the EHS F-Wing by Unisys in August 2014 in response to detections of TCE in sub-slab vapor during a VI assessment as part of Site Characterization (Geosyntec, 2019b). The static and transient vacuum responses associated with HVS tests at Room 130, Room 127, Room 125, Room 122, Room 120, and the Hallway outside of the Guidance Office were considered when designing the mitigation system. The SSD system includes four suction points connected through a manifold to a riser pipe that extends through the roof. Suction points are located in Rooms 124, 126, 127, and 130 of the EHS F-Wing. Suction points were located near interior walls to avoid open space and provide vertical support for the riser pipes. Suction point riser pipes were joined via a horizontal conveyance pipe manifold above the suspended ceiling on the first-floor and then extended vertically via a single riser pipe through the first-floor ceiling, a second-floor classroom (Room Number 234), and to the roof. A roof mounted fan is connected to the piping network and is used to create a sub-slab vacuum field below the building.

Construction and inspection of the F-Wing sub-slab vapor mitigation system is documented in the F-Wing SSD IRM CCR included in the Vapor Intrusion Assessment Report (Geosyntec, 2019e). Two sets of air samples were collected to assess the impact of SSD System operation on TCE

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concentrations in Room 127 and in Room 129. One set of samples was collected from 19 to 20 August 2014 to measure TCE concentrations in indoor air when the HVAC system was off, and a second set was collected on 20 August 2014 to measure TCE concentrations in the indoor air when the HVAC system was running in occupied mode. Samples were collected using the same techniques and equipment and at the same locations used previously in the study. The TCE concentration in Room 127 indoor air dropped from 1.9 µg/m^3 prior to mitigation to 0.21 µg/m^3 afterward, and the TCE concentration in Room 129 dropped from 0.44 µg/m^3 to non-detect. These results demonstrate that the SSD System is effective at substantially reducing TCE concentrations in indoor air.

3.1.5 Music Wing

A sub-slab vapor mitigation system was installed in the Music Wing in August 2018 in response to detections of TCE in sub-slab vapor during the SVIA described in Section 2.1. Static and transient vacuum response data collected during HVS testing were considered when designing the mitigation system. The SSD System consists of five suction points (SP-M1 through SP-M5) installed within classrooms in the Music Wing of EHS. Suction points were located near interior walls to avoid open space and provide vertical supports for the riser pipes. Suction point riser pipes were joined via a series of horizontal conveyance pipe manifolds and vertical riser pipes above both the suspended ceiling on the first floor and below the second floor HVAC Mechanical Room ceiling and then extended vertically via a single riser pipe through the roof to the SSD blower. Piping was labeled "Active Soil Depressurization System, Do Not Alter" at all accessible locations. PVC blast gate valves and Magnehelic vacuum gauges were installed in each suction pipe to allow air flow through the system and vacuum to be balanced. Magnehelic gauges were installed on each suction point riser pipe to indicate static vacuum levels. Magnehelic gauges were selected with a scale appropriate for the blower (i.e., 0–30 inches of water column) and were attached to the block wall near the blast gate valve for each suction point. As-built drawings of the Music Wing SSD System were provided in the Music Wing SSD System CCR submitted to NYSDEC on 28 March 2019 in response to contingent Agency approval of the 31 January 2019 revision received on 4 March 2019 (**Appendix A**).

A Compact Radial Blower is located on the roof of the building and draws soil vapors from the five suction points through the pipes and exhausts above the roofline. Blower exhaust was installed approximately seven feet above the roofline and 20 feet from windows, doors, and air intakes. The blower is connected to the building's automation system, which monitors blower operation and will alert district personnel if the blower fails.

Construction and inspection of the Music Wing sub-slab vapor mitigation system is documented in the Music Wing SSD System IRM CCR included in the SVIA Report (Geosyntec, 2019e). On 29 August 2018, about 24 hours after the Music Wing SSD System was commissioned, indoor air Summa samples were collected over an eight-hour period in Room 146, Room 147, Room 148 and Room 151 as requested by the NYSDEC in the SSD System design approval letter of 17 August 2018 (**Appendix A**). The HVAC system was operating in building occupied mode during the sampling period. Subsequently that night, an additional suite of eight-hour air samples was collected in the same locations with the HVAC system operating in unoccupied mode. Concurrent

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outdoor air samples were collected from a rooftop location between the SSD System stack and the air intake. TCE was not detected in the Music Wing samples other than the SSD stack. Comparison of the pre- and post-SSD system mitigation sampling results from Room 148 showed a decrease from 0.37 µg/m^3 in pre-mitigation to non-detect post-mitigation. Carbon tetrachloride concentrations were similar due to background sources. Concentration of other VOC constituents also decreased or were non-detect post-mitigation.

3.1.6 ISMP Post-Mitigation Sampling and Remedial System Sampling

Indoor and outdoor air samples were collected at EHS as part of post-mitigation sampling under the ISMP approved by NYSDEC in December 2019 (**Appendix A**). The first post-mitigation samples were collected in December 2019 over an 8-hour period during the heating season in Room 127 in the F-Wing, Room 148 in the Music Wing, the Cafeteria, the Gymnasium, and the K-Wing corridor with outdoor air samples collected from the rooftop of F-Wing and K-Wing (**Figure 3-3**).

Amendment #1 to the ISMP was submitted to NYSDEC on 11 December 2020 to present modifications to ISMP monitoring and sampling to be implemented between December 2020 and December 2021. A revised Amendment #1 was submitted on 18 December 2020 in response to Agency comments and was approved on 21 December 2020 (**Appendix A**). Modifications included collection of indoor and outdoor samples quarterly for VOC analyses over a 7-day period using capillary flow controllers. Indoor air samples were collected at the Cafeteria, F-Wing, Gymnasium, K-Wing, and Music Wing in December 2020, April 2021, August 2021, and December 2021; however, no Gymnasium sample was collected in April 2021. Outdoor air samples were near the HVAC intakes on the F-Wing and K-Wing rooftops during the same events; however, no outdoor air sample was collected on the K-Wing rooftop in April 2021 (**Figure 3-3**). Samples of the SSD effluent were collected for VOC analyses in December 2020, April 2021, August 2021, and December 2021.

Amendment #2 to the ISMP was submitted to NYSDEC on 20 July 2021 to present modifications to ISMP monitoring and sampling to be implemented in the third and fourth quarters of 2021. Amendment #2 was accepted by NYSDEC as modified on 21 July 2021. Modifications included the collection of indoor and outdoor samples quarterly for PCB analyses. Indoor air samples were collected in July 2021 and December 2021 at the Cafeteria, Gymnasium, K-Wing, the Boys Locker Room, Room 127 in F-Wing, and Room 148 in the Music Wing and an outdoor sample was collected from a manlift located outside the Girls Locker Room (**Figure 3-3**). Samples of the SSD effluent were collected for PCB analyses in July 2021 and December 2021.

Sampling of indoor and outdoor air over an 8-hour period during the heating season for VOCs resumed in December 2022 (**Figure 3-3**). Sampling of the SSD effluent for VOCs was conducted in November 2023.

The results of ISMP post-mitigation sampling and remedial system sampling through 2025 are discussed in Section 6.1.2.

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3.2 Soil IRMs and Corrective Measures

3.2.1 IRM #1

IRM #1 was conducted between 19 June and 8 September 2017. Work included removal of PCB-impacted soils in the vicinity of the EHS Tennis Courts (North Excavation) and Main Parking Lot and West of A-Wing (South Excavation) in accordance with the IRM (#1) Work Plan dated 11 July 2017 (Geosyntec, 2017d) and approved by NYSDEC on 10 August 2017 (**Appendix A**). IRM construction was coordinated with the ECSD High School 2017 Alterations Project that included replacement of the Main Parking Lot and Tennis Courts. IRM action levels for IRM #1 are presented in **Table 3-2**. The North Excavation (including areas under the EHS Tennis Courts) was completed to a depth of 2 ft bgs based on pre-delineation of PCBs above Restricted Residential SCOs during the SC. IRM construction in the South Excavation was limited to excavation up to 4 ft bgs in the Main Parking Lot and up to 2 ft bgs in areas to the east due to the schedule for ECSD capital improvements in 2017. COPCs left in place below the soil cover system in the Main Parking Lot and West of A-Wing were addressed in IRM #3 discussed below. Excavated soils approved by NYSDEC for reuse were used for backfilling below the soil cover system. Amendment #1 to IRM #1 Work Plan dated 11 August 2017 (Geosyntec, 2017e) presented plans for surface soil removal in the southwest portion of the football field and high jump pit area for the purpose of minimizing potential exposure to PCBs in those areas. Activities associated with the football field and high jump pit area were completed between 14 August and 28 August 2017. IRM #1 activities were documented in a Construction Completion Report (CCR) submitted to NYSDEC on 30 April 2018. A Revised CCR Interim Remedial Measure #1 was submitted on 28 February 2019 (Geosyntec, 2019f). NYSDEC provided additional comments for revision on 22 May 2026. CCR Interim Remedial Measure #1 Revision #2 was submitted on 17 June 2026 and approved by NYSDEC on 24 July 2026 (**Appendix A**).

3.2.2 IRM #2

IRM #2, including Amendment #1 and Amendment #2, were conducted between 22 June and 25 October 2018 for removal of PCB-impacted soils in the vicinity of the EHS Rear Parking Lot in accordance with the Revised Final IRM #2 Work Plan dated 13 July 2018 (Geosyntec, 2018b), approved by NYSDEC on 25 July 2018 (**Appendix A**), and incorporated Amendment #1 dated 3 July 2018 (Geosyntec, 2018c), Amendment #2 dated 17 July 2018 (Geosyntec, 2018d), and Amendment #3 dated 18 January 2019 (Geosyntec, 2019d). IRM construction was coordinated with the ECSD High School 2018 Alterations Project that included construction of a bus canopy and improvements to the EHS Rear Parking Lot. IRM action levels for IRM #2 are presented in **Table 3-2**. During excavation, a number of concrete foundations and structures were encountered at depths that prevented the installation of sheet piling. In accordance with the Revised Final IRM #2 Work Plan, it was determined that soil removal could not be completed safely and within the timeframe to return the area to ECSD for capital improvements due to these structures and utilities (**Appendix N**). The presence of these subsurface structures resulted in the use of benching and sloping to excavate safely in place of sheet pile wall installation. The use of sloping and benching reduced the planned IRM #2 excavation volume since impacted soils adjacent and below energized utility lines and historic structures were not removed. These changes were presented in Amendment #2 and approved by NYSDEC. Excavations to address soil impacts were completed

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up to 14 ft bgs, but PCBs above TSCA levels and metal concentrations with the potential to exhibit the characteristic of toxicity were left in place between 2-14 ft bgs. These impacts are below a minimum of two feet of soil cover and are technically impracticable to access due to their proximity to utilities and historic foundations. Areas with impacts remaining within the soil cover, i.e., less than 2 ft bgs, will be addressed by investigation and remediation under the Former Sperry Remington Site – North Portion 2 (BCP Site #c808054). Amendment #3 to the IRM #2 Work Plan was submitted to document modifications to the Revised Final IRM #2 Work Plan with respect to the Materials Storage Area modifications at STCC. Modifications included restoring STCC access, anchoring temporary fencing, installation of composite filter socks, and covering the equipment wash pad for long-term stabilization of the storage area. This also included inspections of the area twice weekly until the area was decommissioned in 2020 as part of Site #p808049. Inspections were completed between January 2019 and June 2020 and documented in monthly progress reports. IRM #2 activities are documented in a CCR submitted to NYSDEC on 18 March 2019 (Geosyntec, 2019g) and approved by NYSDEC on 30 April 2021 (**Appendix A**).

3.2.3 IRM #3

IRM #3 was conducted in the West of A-Wing area, Main Parking Lot, and FFC between 28 June and 14 October 2019 to continue soil removal in the IRM #1 South Excavation in accordance with the Revised Final 2019 IRM Work Plan dated 18 June 2019 (Geosyntec, 2019h), incorporated Amendment #1 dated 9 July 2019 (Geosyntec, 2019i), and Amendment #2 dated 16 August 2019 (Geosyntec, 2019j). NYSDEC gave conditional approval of the Revised Final 2019 IRM Work Plan on 13 June 2019 (**Appendix A**) and for construction drawings and plans on 17 June 2019. IRM #3 was conducted in anticipation of remedial activities and capital improvement in the EHS FFC in 2020. IRM action levels for IRM #3 are presented in **Table 3-2**. Excavations were completed up to the water table, approximately 16 ft bgs, to address soil impacts. Some residual PCBs and metals were left in place due to technical impracticability due to the depth of excavation required for removal that would impact the parking lot, to be addressed during IRM #4 planned for June 2020, for investigation and remediation under the Former Sperry Remington Site – North Portion 2 (BCP Site #c808054), or management under the ISMP pending the final remedy. IRM #3 activities are documented in a CCR submitted to NYSDEC on 14 February 2020 with revised submittals on 22 January 2021, 15 July 2021, 5 July 2022, and 27 February 2024 and approved by NYSDEC on 17 May 2024 (**Appendix A**).

3.2.4 FFC IRM

In anticipation of IRM #5 and capital improvement in the EHS FFC expected for the beginning of Fall 2020 and Spring 2021, IRM #4 was designed for soil removal in the IRM #1 South Excavation adjacent to the north and west sides of the EHS building that, due to timing constraints, could not previously be removed during IRM #3. The pre-final (95%) IRM #4 Work Plan was submitted on 14 February 2020. NYSDEC provided comments on 26 March 2020. The Final (100%) IRM #4 Work Plan was submitted on 30 April 2020. NYSDEC provided comments on 13 May 2020 and a revised Final (100%) IRM #4 Work Plan was submitted on 19 May 2020 (Geosyntec, 2020d). NYSDEC gave approval with modifications on 28 May 2020 (**Appendix A**). Construction of IRM #4 began on 1 June 2020 and was substantially completed on 28 August 2020. Amendment #1 to

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Final (100%) IRM #4 Work Plan (IRM #4A) was submitted on 19 August 2020 to extend the IRM #4 work area to the north and northeast to address areas adjacent to the EHS building and parking lot. NYSDEC provided comments on Amendment #1 on 31 August 2020. A revised Amendment #1 was submitted on 8 September 2020 (Geosyntec, 2020e) and was approved with modifications on 18 September 2020 (**Appendix A**). IRM #4A construction began on 21 September 2020 and excavation was completed on 9 March 2021. IRM action levels for IRM #4 and IRM #4A are presented in **Table 3-2**. Excavations were completed up to the water table, approximately 16 ft bgs, to address AOC soil impacts. Within the Revised BCP Site, PCBs and metals were left in place due to technical impracticability of excavating soils at and below the water table and the required offset to the building foundation to maintain the structural integrity, or for management under the ISMP pending the final remedy. PCBs and metals left in place for removal during future remediation are located within the New BCP Site #c808054. Restoration was completed during IRM #5 as discussed below.

IRM #5 was designed for soil removal in the EHS FFC. The pre-final (95%) IRM #5 Work Plan was submitted on 14 February 2020. NYSDEC provided comments on 2 April 2020. The Final (100%) IRM #5 Work Plan was submitted on 21 July 2020. NYSDEC provided comments on 26 August 2020 and a revised Final (100%) IRM #5 Work Plan was submitted on 14 September 2020. NYSDEC provided notes to the 14 September 2020 submittal on 8 October 2020. A revised Final (100%) IRM #5 Work Plan was submitted on 23 October 2020. NYSDEC provided comments on 13 November 2020 and a revised Final (100%) IRM #5 Work Plan was submitted on 24 November 2020 (Geosyntec, 2020f). NYSDEC gave conditional approval with modifications on 4 December 2020 (**Appendix A**). Construction of IRM #5 began on 15 December 2020. Amendment #1 to Final (100%) IRM #5 Work Plan (IRM #5A) was submitted on 11 February 2021 to update the IRM #5 design to incorporate confirmation sample results from IRM #4A and IRM #5, provide excavation work plan (EWP) notification under the ISMP for intrusive activities related to EHS stadium construction, and conduct additional investigation of the FIS (Geosyntec, 2021b). NYSDEC approved IRM #5A with modifications on 24 February 2021 (**Appendix A**), requesting additional information for the EWP notification and FIS investigation. An updated EWP notification was submitted on 15 March 2021, and notification for FIS inspection was provided on 19 March 2021 (Geosyntec, 2021c). IRM construction was coordinated with EHS 2020 stadium renovations beginning in March 2021. IRM action levels for IRM #5 are presented in **Table 3-2**. The PoG SCO for TCE was added as an IRM action level in December 2020 when TCE-impacted soils were encountered in the northeast portion of the FFC and where TCE had been detected above TOGS groundwater standards. IRM #5 construction on the football field was substantially complete with a pre-final inspection 14 July 2021. ECSD punch list items for the football field were completed on 5 October 2021. FIS removal and restoration east of the football field were completed on 17 November 2021. Excavations were completed up to the water table, approximately 16 ft bgs, to address soil impacts. PCBs, metals, and SVOCs were left in place due to technical impracticability, for removal during future remediation, or management under the ISMP pending the final remedy. PCBs and metals left in place for removal during future remediation are located within the New BCP Site #c808054.

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Amendment #3 to Final (100%) IRM #5 Work Plan (IRM #5A3) was submitted on 10 June 2022 to present a scope of work for soil removal to allow for construction of sidewalk between the EHS locker rooms and the new EHS stadium. NYSDEC approved IRM #5A3 with modifications on 1 July 2022 (**Appendix A**). IRM action levels for IRM #5A3 are presented in **Table 3-2**. IRM #5A3 construction began on 26 July 2022 and was completed on 3 September 2022. Excavations were completed to 2 ft bgs to address soil impacts. Within the Revised BCP Site #c808022, PCBs, metals, and SVOCs were left in place for management under the ISMP pending the final remedy. PCBs and metals left in place for removal during future remediation are located within the New BCP Site #c808054.

As reported to the Agency in a Demarcation Layer Corrective Measures Report for the southeastern portion of the FFC on 4 April 2022, TP-Y1 was identified as having a final cover thickness of 1.58 ft bgs. This test pit was also located on the northern boundary of IRM #5A3 completed between July and September 2022. Following excavation completion of IRM #5A3, the excavation extent as well as demarcation was surveyed by a NYS licensed surveyor. This survey confirmed the IRM #5A3 excavation tied into demarcation placed during IRM #5 along the northern boundary with a minimum 2 ft soil cover thickness. No future actions are required to address soil cover deficiencies proximal to TP-Y1 in areas proximal to the IRM #5A3 limits of excavation. Pursuant to the EC CMWP and Report, corrective measures were performed by removal of the soil cover system to two ft below proposed final grade in the northern portion of the FFC beginning on 2 March 2022. Additional native excavation was performed in the very northeast corner of the FFC based on correspondence with NYSDEC that was beyond the limits of the IRM #5 excavation. Additional confirmation samples were collected for PCBs and metals in areas where native excavation was completed. As-built information was provided to the Agency as the corrective measures progressed to document excavation and removal of the cover system was completed to two ft below proposed final grade and demarcation was placed, which tied into areas excavated as part of the NAF to 2.5 ft bfg.

Final restoration was completed with the completion of EHS stadium construction on 23 September 2022 under the EWP notification provided under IRM #5A and the ECSD EHS FFC Cover System EWP notification dated 30 March 2021 (revised 26 April 2021). IRM construction activities for IRM #4, IRM #4A, IRM #5, and IRM #5A3, and ECSD ISMP construction of the FFC cover system were documented in an FFC IRM CCR submitted to NYSDEC on 7 March 2025 (Geosyntec, 2025c).

NYSDEC provided comments for revision on 16 September 2025 for the FFC CCR, including requests for additional information regarding the import of materials in accordance with DER-10. A Revised IRM #5 Corrective Measures Work Plan (CMWP) was submitted on 10 March 2026 to propose soil cover verification sampling on the FFC for materials imported by ECSD and their representatives for the EHS 2020 Stadium Renovations, including structural fill, topsoil, and sand, that did not have adequate chemical testing performed in accordance with DER-10 nor approval to import the material from the Agency during restoration activities (Geosyntec, 2026a). In addition, NYS licensed survey information was not provided to verify the depths/thickness of each material that makes up the 2-ft cover system on the FFC. The Revised IRM #5 CMWP included

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sampling to characterize the quality of material that will remain in place within an area around the perimeter of the FFC and sand placed within the triple jumps. The Revised IRM #5 CMWP was approved as modified by the Agency on 25 March 2026 (**Appendix A**) and the scope of work was completed between 11 and 13 March 2026. Addendum #1 to the Revised IRM #5 CMWP was submitted on 14 April 2026 (Geosyntec, 2026b) and approved on 22 April 2026 (**Appendix A**). The Addendum #1 scope of work included SCV sampling on the FFC within bedding sand which is part of the cover system and was completed between 23 and 24 April 2026. Findings of the Revised IRM #5 CMWP and Addendum #1 were reported in an Interim Data Report submitted on 5 May 2026 (Geosyntec, 2026c) and were included in a Revised FFC IRM CCR (Geosyntec, 2026d) submitted on 2 September 2026 which was approved by the Agency on 29 September 2026 (**Appendix A**).

3.2.5 NAF IRM

Amendment #2 to Final (100%) IRM #5 Work Plan (IRM #5A2) was submitted on 12 March 2021 to present a scope of work for soil removal and FIS removal on the EHS NAF. Revisions to IRM #5A2 were submitted on 30 April 2021 and on 20 July 2021 in response to NYSDEC and ECSD comments received on 26 March 2021 and 14 and 21 May 2021, respectively. On 3 August 2021, Unisys submitted plans for an STRA to provide an interim outdoor physical education area and temporary rally point north of the EHS Tennis Courts. This area coincides with a portion of the Amendment #2 work area and the area proposed by ECSD for construction of a shot put and discus area and paved parking area. STRA construction began on 5 August 2021 following receipt of Agency approval on 4 August 2021 (**Appendix A**) and was completed on 27 August 2021. Revisions to IRM #5A2 were submitted on 3 September 2021 in response to NYSDEC and ECSD comments and account for STRA usage by ECSD. Further comments from ECSD and NYSDEC were received on 17 and 21 September respectively, and a revised IRM #5A2 was submitted on 8 October 2021. IRM #5A2 was approved with modification on 22 October 2021 with a revised submittal on 19 November 2021 (Geosyntec, 2021d). IRM #5A2 construction began on 22 October 2021. The STRA including the interim outdoor physical education area, and temporary rally point was decommissioned on 22 June 2022 with the consent of ECSD to allow for IRM #5A2 Phase 3 excavations in that area. IRM action levels for IRM #5A2 are presented in **Table 3-2**. The PoG SCO for TCE was added as an IRM action level in January 2022 when TCE-impacted soils were encountered in the vicinity of a former rail spur on the east side of the NAF and where TCE had been detected above TOGS groundwater standards (**Table 3-2**). IRM #5A2 Phase 2 excavations were completed on 14 October 2022 and backfill was completed on 17 January 2023. The IRM #5A2 Phase 3 excavation was completed in November 2022, following excavation and backfilling of the underground storage tank excavation. A backfill package titled Florida South, was submitted to the Agency in September 2022. The backfill package included post-excavation sample locations and analytical data collected in the Florida south area, as well as the A-4 south line. The A-4 south line was completed under the ISMP EWP Notification/Work Plan – Baseball Field Dugout and Press Box which required completion of the south line of IRM #5A2 EC soil cover system to tie into the EHS stadium EC cover system to the south. This work was completed in parallel with excavations completed during Florida south. Excavation was not completed for the A-4 south line in areas where native soil met Restricted Residential standards from 0-2 ft bgs and IRM standards below 2 ft bgs. Therefore this soil was not required to be removed as part of IRM #5A2, IRM #5,

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or subsequent stepouts as depicted on **Figure 5-4A**. This area was turned over to ECSD for construction of the shot put and discus area and paved parking area on 4 November 2022 as part of the EHS 2020 stadium renovations. Excavations were completed up to the water table, approximately 16 ft bgs, to address soil impacts. PCBs, metals, SVOCs, and VOCs were left in place for management under the ISMP pending the final remedy or investigation and remediation under BCP Site #c808054. NAF restoration and improvements began on 26 March 2023 in accordance with site development plans for NAF restoration prepared by Marathon Engineering for Unisys and 2022 EHS NAF improvements plans prepared by Hunt Engineers, Architects and Surveyors for ECSD, respectively. IRM #5A2 construction and NAF restoration and improvements were substantially completed on 31 July 2024. IRM construction activities for IRM #5A2, ECSD construction of the shot put and discus area and paved parking area, and NAF restoration of the ballfields are documented in an NAF IRM CCR submitted on 17 January 2025. NYSDEC provided comments for revision on 13 June 2025 and a revised NAF IRM CCR was submitted on 21 July 2025 (Geosyntec, 2025b). NYSDEC provided further comments for revision on 17 October 2025 and a second revision was submitted on 24 October 2025.

The NAF IRM CCR was accepted by NYSDEC on 9 December 2025 but the acceptance was rescinded on 23 January 2026 in light of new information received on 31 December 2025 regarding the import of materials by ECSD and their representatives. A Revised IRM #5A2 (Northern Athletic Fields) CMWP was submitted on 25 February 2026 to propose SCV sampling of the NAF Shot Put and Discus Area within topsoil imported by ECSD and their representatives for the EHS 2020 Stadium Renovations (Geosyntec, 2026e). Topsoil did not have the required chemical testing performed or acceptance to import the material from the Agency during restoration activities by ECSD. The Revised IRM #5A2 CMWP included sampling to characterize the quality of material that will remain in place for topsoil in the Shot Put and Discus Area. Limited Agency approval of the Revised IRM #5A2 CMWP was provided by the Agency on 25 March 2026 (**Appendix A**) and the scope of work was completed between 2 and 4 March 2026. In addition, an Amendment (Amendment #1) to the IRM #5A2 CMWP was submitted to the Agency on 4 March 2026 to complete sieve analysis on 1.5-inch rock imported by ECSD representatives during restoration activities in the Shot Put and Discus Area (Geosyntec, 2026i). The 1.5-inch rock did not have the appropriate geotechnical testing performed or acceptance to import the material from the Agency. Limited Agency approval of the Addendum #1 Work Plan was provided on 25 March 2026, and the scope of work was completed concurrently with the IRM #5A2 CMWP. Findings were reported in an IDR submitted on 1 April 2026 (Geosyntec, 2026f) which was approved by the Agency on 22 May 2026 (**Appendix A**) and included in a Revised NAF IRM CCR submitted on 19 June 2026 (Geosyntec, 2026g) and approved by the Agency on 16 July 2026 (**Appendix A**).

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4. SITE GEOLOGY AND HYDROGEOLOGY

This section describes the geology and hydrogeology of the Site as a whole based on information presented in the Revised RI Work Plan and data collected as part of the RI. Descriptions provided herein are applicable to the Revised BCP Site.

4.1 Surface Soils

Site soils are generally permeable and permit relatively rapid infiltration of precipitation. According to the U.S. Department of Agriculture Soil Conservation Service soil survey map, the soil type at the Site primarily consists of made land. Made land indicates urban soil or fill soil that has been developed or altered. Howard gravelly silt loam is also present along the edges of the Site. Howard gravelly silt loam is developed in stratified glacial outwash deposits. These soils are nearly level to gently sloping, deep, and well-drained to somewhat excessively drained, and they exhibit medium to moderately coarse textures.

4.2 Subsurface Soils and Bedrock

The Site is located within the Allegheny Plateau Physiographic Province. The regional geology is characterized by bedrock overlain by unconsolidated glacial and alluvial deposits. Bedrock in the region consists of the Portage Formation and the overlying Chemung Formation, which are sandstone, siltstone, shale, and limestone. Bedrock underlying the Site is shale, encountered at approximately 780 ft amsl.

The locations of Site hydrogeological cross sections are shown on **Figure 4-1**. **Figures 4-2**, **4-3**, and **4-4** present hydrogeologic cross sections north-south across the eastern edge of the Site (A-A'), north-south across the high school (B-B'), and east-west across the high school (C-C'), respectively, with interpolated fill thickness, depth to native soil and bedrock, and water table elevations. A stratigraphic layer comprising reworked native soils and fill material is located on the Site at a depth of approximately 0-6 ft bgs, although the thickness varies across the Site. The fill unit is composed primarily of medium to fine sand with silt and medium to fine gravel and in places includes some red brick, concrete fragments, and wood debris. Due to the historical property use and COPCs identified in soil, soil cover quality verification is required for all native materials remaining in place as a 2-foot soil cover. Native soils remaining in place as the 2-foot soil cover in areas located outside of completed soil IRMs but existing within the Revised BCP Site #c808022 limits required soil cover quality verification to demonstrate soil cover compliance with Restricted Residential SCOs. This demonstration was completed through soil cover verification testing for the Site, with results documented in Section 6.3.

Two naturally occurring continuous stratigraphic units underlie the fill unit. The upper unit is post-glacial outwash. This unit consists of relatively permeable gray-brown fine sand and sub-rounded to rounded, coarse to fine gravel. The post-glacial outwash unit extends from approximately 6 ft bgs to approximately 38 ft bgs over most of the Site. The base of this unit varies in depth, as shown on **Figure 4-5**. The bottom of the unit was encountered as shallow as 20 ft bgs in the NAF, while previous investigation including borings beneath and near the EHS building (Empire Soils

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Investigations, Inc., 1977) document the unit extending to 42 ft bgs in the southwestern portion of the Site.

The second unit is a glacio-lacustrine silt and clay (silty clay aquitard). The unit is relatively impermeable and consists of soft, gray-brown silt and clay and extends from approximately 38 ft bgs to approximately 78 ft bgs in undisturbed areas. The top of weathered bedrock underlies the glacio-lacustrine unit and overlies competent shale, which dips slightly to the north.

4.3 Hydrogeology

The water table beneath the Site generally occurs at a depth of approximately 14-16 ft bgs in monitoring wells screened within the shallow water-bearing zone in the sandy post-glacial outwash unit (RI monitoring wells with an 'S' suffix or no suffix). Groundwater elevation measured at shallow groundwater monitoring wells in April 2024 was observed to range from 835.24 ft amsl to 841.80 ft amsl, as shown in **Table 4-1**. Groundwater elevations during April seasonally high-water level conditions were on average 0.27 feet higher across the Site than elevations measured during September seasonally low water level conditions.

Groundwater flow is inferred to be primarily easterly in the uppermost water-bearing zone at the Site. Groundwater elevation contours shown on **Figures 4-6** and **4-7** for September 2023 and April 2024, respectively, have been interpolated to 0.5 feet intervals based on available data to depict variations in groundwater flow. The potentiometric surface is relatively flat over the Site, with an average hydraulic gradient of approximately 0.003 ft/foot (as measured from MW-78S to MW-1 in April 2024).

The shallow zone extends to approximately 25 ft bgs and is underlain by an intermediate zone extending from approximately 25 ft bgs to the top of the silty clay aquitard at approximately 38 ft bgs. RI monitoring wells with an 'I' suffix are screened 1 foot into the base of the silty clay aquitard. Consistent vertical hydraulic gradient has not been observed between shallow and intermediate-depth monitoring wells. A monitoring well, MW-11D, was installed below the silty clay aquitard by others in 2003 and is screened from 73.50-78.50 ft bgs within weathered shale bedrock. This monitoring well and the data associated are included in this report for completeness.

Additionally, two production wells that provide non-contact cooling water are located to the south of the EHS building. Based on data provided by ECSD, the pumping capacity of each well is approximately 600 gallons per minute. Pumping Well #1 is screened from 21-31 ft bgs within the intermediate zone directly above the silty clay aquitard. The screen information for Pumping Well #2 is unknown.

Geochemical modeling indicates that widely distributed and temporally limited exceedances of iron and manganese above TOGS groundwater standards observed at the Site are related to naturally fluctuating groundwater redox conditions and changing stability of iron- and manganese-bearing minerals. When assessed in tandem with observations of iron and manganese concentrations within solids at the Site sufficient to provide the concentrations observed, as well as the dispersed and transient nature of groundwater exceedances, multiple lines of evidence support the conclusion that iron and manganese TOGS groundwater standards exceedances are

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related to naturally occurring groundwater redox fluctuations within the uppermost aquifer that would be considered consistent with background, unimpacted regional groundwater characteristics.

4.4 Hydraulic Evaluation

A hydraulic evaluation of the sand and gravel aquifer (shallow water-bearing zone) was completed as part of an evaluation of the feasibility of the Infiltration Gallery (IG) installed and used as drainage infrastructure in the EHS Northern Athletic Fields. Installation of the IG and associated backfilling was performed by Edger from 21 June to 10 July 2023, with the exception of manhole locations on the north and south side of the IG. These areas were not backfilled as to allow for final stormwater connections which would allow stormwater infiltration to the IG. On 24 August 2023, approval was received from the Agency for final stormwater connections. On 20 October 2023 an as-built package was submitted to the Agency which depicted each IG layer as it progressed in construction as well as each layer of approved imported material utilized during backfill of the IG. As-builts were approved by the Agency on 27 November 2023.

This evaluation provided information regarding groundwater flow at the Site that supports findings regarding nature and extent of COPCs in groundwater. The hydraulic evaluation consisted of two parts: i) evaluating the potential impact of groundwater mounding at the IG and ii) evaluating the potential impact of groundwater recharge from the IG on groundwater hydrodynamics. The findings of this evaluation were presented in the Revised Infiltration Gallery Evaluation Report submitted 19 June 2023 (**Appendix O**). A summary of this evaluation is presented below. Applicable figures, tables, and design parameters are included in **Appendix O**.

Geosyntec evaluated the potential impact of groundwater mounding using the Hantush (1967) equation and site-specific data. This analysis is typically required for stormwater infiltration systems by most states. The equation assumes that all flow is horizontal and the initial water-table gradient is zero. The equation is used to calculate the maximum height of groundwater mounding and the mounding at specified distances from the center of the mound. Geosyntec used a spreadsheet provided by USGS (Carleton, 2013) to calculate the mounding height for a variety of infiltration/recharge rates corresponding to possible compacted fill materials below the gallery. Inputs included vertical infiltration/recharge rate, horizontal soil hydraulic conductivity, specific yield, initial saturated aquifer thickness, basin length, basin width, and duration of infiltration/recharge. Information about the basin parameters was taken from an interim design schematic provided by HUNT Engineers, Architects, Land Surveyors & Landscape Architect, DPC on January 17, 2023 (**Appendix O**).

The potential impact of groundwater recharge from the IG on groundwater hydrodynamics was evaluated using a groundwater flow model. The model was used to evaluate groundwater flow conditions under two main scenarios: a constant infiltration scenario and an extreme event infiltration scenario. These scenarios were developed to represent conservative estimates of the potential impact on the groundwater flow field. Actual infiltration at the proposed gallery is not anticipated to result in larger infiltration volumes than simulated in these scenarios. Both simulated

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scenarios resulted in groundwater flow paths that would not lead to alterations of the extent of COPCs in groundwater.

Details of the two scenarios considered in modeling infiltration from the IG are as follows (derivation and model constraints provided in **Appendix O**):

1. Average infiltration was simulated with a constant infiltration rate of 670 ft^3/day, corresponding to the maximum monthly average runoff at the proposed IG under steady-state conditions. Maximum monthly average runoff value of 670 ft^3/day is the product of the maximum average monthly precipitation (June, 0.143 in/day), the total drainage area of (7.8 acres), and the runoff coefficient (16.5%, based on impervious and pervious drainage area), as further explained in Section 1.6 of **Appendix O**. The use of the maximum monthly average runoff provides a conservative estimate of constant infiltration at the gallery.
2. Extreme event infiltration was simulated with an initial one-day constant infiltration rate of 94,000 ft^3/day (applied from simulation start for 24 hours), followed by constant infiltration at 466 ft^3/day for the remaining 364 days of simulation. The extreme event infiltration rate corresponds to runoff infiltration for 24 hours at the maximum infiltration rate of 16.5 ft/day applied over the modeled area of the IG (5,694 ft^2), and the subsequent constant infiltration rate corresponds to the rate of average annual precipitation (0.10 in/day), with calculated runoff volumes again the product of precipitation, total drainage area, and runoff coefficients. This scenario represents the greatest potential change in groundwater conditions at the infiltration rate for an engineered sand fill material used for modelling.

The results of the two scenarios were used to evaluate potential groundwater mounding and potential impacts to groundwater flow from the IG to comprehensively assess hydraulic impacts.

4.4.1 Groundwater Mounding Evaluation

Groundwater mounding calculations were completed to provide an estimated range for anticipated change in groundwater height beneath and laterally from the proposed IG. Details of the groundwater mounding calculations are described in **Appendix O**. The shape and height of the groundwater mound beneath the IG are controlled by infiltration rate (functionally equivalent to recharge rate within the specified parameters), aquifer properties, and shape of the infiltration structure.

Groundwater mounding over a 1-day infiltration duration was estimated using the Hantush equation (Hantush, 1967) and site-specific data for a range of various fill materials emplaced beneath the IG that correspond to varying infiltration rates. Evaluation of fill material included the minimum allowable infiltration rate for an engineered sand fill material (8.27 in/hr) presented in the NYSDEC Stormwater Management Design Manual (SMDM, May 2022), as well as the imported sand fill that corresponds to design parameters (12 in/hr) provided in the Stormwater Pollution Prevention Plan developed by Hunt (dated April 2023) for the proposed IG. The infiltration rate of water delivered to the IG used in the modeling estimation is approximately equivalent to a 10-year 24-hour storm and represents a scenario corresponding to the greatest

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potential change in groundwater conditions. Under a constant infiltration rate scenario, the maximum calculated change in groundwater height is 2.6 ft, corresponding to the proposed IG design imported sand fill material, while the minimum allowable sand infiltration rate from the NYSDEC SMDM yielded a calculated change in groundwater height of 1.825 ft. A maximum calculated change in groundwater height of 0.012 ft was modeled for a scenario that utilized the maximum average monthly precipitation to estimate monthly runoff to the IG.

4.4.2 Groundwater Modeling Evaluation

A description of the groundwater hydrodynamics and potential impacts to groundwater flow due to infiltration from the proposed IG within this portion of the NAF area is detailed in **Appendix O**. The groundwater zone was characterized as a transmissive aquifer, consisting of gravel with silt and sand, and an underlying layer of silty clay set at an elevation interpreted from boring logs in this area of the Site. The water levels are based on data collected from 65 monitoring wells across the Site in October 2021. The base of the groundwater zone (a.k.a., the top of the silty clay aquitard) is shown as a contour map based on all available site soil boring log data in **Appendix O**.

A modeled extreme storm event scenario that fills the infiltration gallery and then drains over 24 hours at the maximum infiltration rate of 16.5 ft/day shows minimal impact to the groundwater flow field at and near the IG (Appendix O). Consequently, there will be minimal impact from the IG on the extent and migration of COPCs in groundwater. In addition, based on the minimal impact to the groundwater flow field at and near the IG, implementation of in-situ treatment in an area north of the IG would not be adversely affected by the IG, given its distance and direction from the IG.

Using a minimum allowable infiltration rate value for sand fill beneath the IG (16.54 ft/day), the calculated groundwater mounding relative to the baseline conditions for the model simulations of constant infiltration and extreme event infiltration are shown in **Appendix O**. The model estimations indicate that under conditions that represent average infiltration, changes to the groundwater elevation in the vicinity of the IG will be minimal, with estimated increases of less than 0.02 ft. Modeled groundwater flow paths under the average infiltration scenario are similar to baseline conditions. Simulations of extreme event infiltration, followed by constant infiltration, led to greater initial increases in groundwater elevation within the vicinity of the IG, up to 1.8 ft beneath the infiltration gallery. Groundwater elevations are observed to return quickly to near baseline conditions with an estimated change of 0.12 ft after 10 days under this scenario, with particle flow paths similarly returning to near baseline orientation after cessation of the one-day extreme event infiltration. This infiltration driven change in water level is on par with the magnitude of seasonal groundwater fluctuations of 1.2 ft observed within monitoring wells in the area of the proposed IG (MW-51, MW-55, and MW-57; between February 2021 and October 2021). Under both scenarios, groundwater flow paths are similar to baseline conditions.

4.4.3 Conclusions of the Infiltration Gallery Feasibility Evaluation

An evaluation that included detailed consideration of soil quality, groundwater quality, potential impact on groundwater hydrodynamics, and potential impact on a conceptual in-situ treatment of

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a VOC impacted area north (side-gradient) of the proposed IG demonstrated that the proposed IG will be capable of dispersing rainfall events of widely varying intensities and duration to the water table without causing adverse bulk transport of VOCs within the AOC-19 footprint.

The findings from the IG evaluation demonstrate the Site groundwater flow hydrodynamics controlling the transport and distribution of COPCs in groundwater. These hydrodynamics cause the COPC concentrations in groundwater to remain stable or decrease over time. As reported in the *Revised IG Post-Construction Final Monitoring Report* (Geosyntec, 2025a), the groundwater velocity was calculated as the product of the horizontal hydraulic conductivity (K = 1,460 ft/day, as calculated from a 1978 pumping test analysis, using the Neuman solution for an unconfined aquifer) and a horizontal hydraulic gradient (i) of 0.0053 (the largest horizontal hydraulic gradient observed during the IG evaluation) divided by the effective porosity n = 0.324 (as estimated from the specific yield for the saturated aquifer). This yields a groundwater velocity (v) of 23.8827 ft/day. Potential lateral movement of groundwater particles within the IG area with observed COPC exceedances in response to recharge events is estimated to be limited to 11 feet and would be of such a short duration as to impart a negligible deviation for normal flow direction and gradient (Geosyntec, 2025a). Meanwhile, at the ambient groundwater flow rate, the volume of groundwater passing through the area with observed COPC exceedances, over five decades since plant operations ceased, has accounted for multiple rounds of pore volume flushing. This flushing results in dilution of the COPC concentrations below the water table. Now that COPC source material above the water table has been removed, the concentration and distribution of COPCs in groundwater will remain stable or decrease under these groundwater flow conditions. To validate the stability or reduction of the COPC impacts in groundwater, a monitoring program will be implemented as part of the ISMP and future Site Management Plan (SMP).

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5. AREAS OF CONCERN INVESTIGATIONS

This section describes the findings of the investigation of AOCs prior to IRM activities, including field observations and analytical results from the sampling of indoor/outdoor air, sub-slab vapor, soil, groundwater, and fine-grained material in catch basins and sewers. **Table 1-1** provides a description of the potential source associated with each AOC, associated COPC, potential transport mechanism, potential exposure pathways, media of concern, investigations completed, and the investigation summary. A summary of the AOCs associated with each area of the Site is presented in Sections 5.1. Investigation findings and associated conclusions for each AOC are presented in Section 5.2. For the investigation summaries presented in Section 5.2, duplicate results were not treated as independent samples. Where both a primary sample and a field duplicate were collected from the same location, the higher reported concentration was conservatively selected as the representative result for that location to support evaluation of site conditions.

Investigation for AOCs located within the New BCP Site are ongoing and will be presented in the #c808054 RI/AA. AOCs were investigated in the manner presented in Section 2 including indoor/outdoor air and sub-slab vapor assessment; ISMP post-mitigation sampling and analysis of indoor/outdoor air; ISMP remedial sampling of SSD System effluent; soil sampling and analysis; groundwater sampling and analysis and water level measurement; and sewer sampling, analysis, and assessment. Findings include field observations, physical measurements, and results of laboratory analyses. Analytical results are tabulated as follows:

- VOC analytical results for indoor air and outdoor air are provided in **Table 5-1A** and **5-1B**, respectively. Sub-slab vapor grab samples are provided in **Table 5-2**. HVS discharge samples in **Table 5-3**.
- PCB analytical results for indoor and outdoor air are provided in **Table 6-1E**.
- Analytical results for surface soil, shallow subsurface soil, subsurface soil to the water table, and subsurface soil below the water table are provided in **Tables 5-4 A-E**, **5-5 A-E**, **5-6 A-E**, and **5-7 A-E**, respectively. COPC detections in soil are compared to RI screening criteria, Restricted Residential SCOs, and PoG SCOs.
- Total PCB concentrations in soil are evaluated to identify PCB remediation waste as defined by 40 CFR 761.3 (i.e., as-found concentrations of total PCBs greater than or equal to 50 mg/kg [TSCA levels]) and listed hazardous waste (solid waste containing 50 mg/kg or greater of PCBs) as defined in 6 NYCRR Part 371.4 (e).
- Metal concentrations in soil are evaluated to identify soils that have potential to exhibit the characteristic of toxicity by comparison to 20 times the equivalent RCRA characteristic toxicity or, in the case of lead, 200 times the equivalent toxicity characteristic (as described in NYSDEC approved Remedial Investigation Work Plan Amendment #1 [Geosyntec, 2020i]).
- Groundwater analytical results including those from previous investigations are presented in **Tables 5-8**, **5-9**, **5-10**, and **5-11**, for PCBs, metals, SVOCs/TPH, and VOCs, respectively, and are compared to TOGS groundwater standards. Groundwater

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analytical results for emerging contaminants (PFAS and 1,4-dioxane) are presented in **Table 5-12** and compared to NYSDEC guidelines (NYSDEC, 2023).

- As presented in Section 4.3, geochemical modeling indicates that widely distributed and temporally limited exceedances of iron and manganese above TOGS groundwater standards detected at the Site are related to naturally fluctuating groundwater redox conditions and changing stability of iron- and manganese-bearing minerals. When assessed in tandem with observations of iron and manganese concentrations within solids at the Site sufficient to provide the concentrations observed, as well as the dispersed and transient nature of groundwater exceedances, multiple lines of evidence support the conclusion that iron and manganese TOGS groundwater standards exceedances are related to naturally occurring groundwater redox fluctuations within the uppermost aquifer that would be considered consistent with background, unimpacted regional groundwater characteristics. Therefore, iron and manganese detected in groundwater above TOGS groundwater standards are not discussed further in Section 5.
- Evaluation of thallium via EPA Method 6020 in addition to EPA Method 6010 effectively demonstrates that EPA Method 6010 results are likely false positives and biased high for thallium due to spectral interferences. Therefore, thallium detected in groundwater above TOGS groundwater standards is not discussed further in Section 5.
- DEHP is a common cross-contaminant and is not a Site COPC. The Wisconsin Department of Natural Resources recognizes DEHP as a common cross-contaminant due to its widespread use in plastics such as polyvinyl chloride (Wisconsin Department of Natural Resources 2002). At the Site, monitoring well casings are constructed of polyvinyl chloride and low-density polyethylene tubing is used for low-flow sample collection, both of which are potential sources of DEHP contamination. Historically, detections of DEHP at the Site have been infrequent and sporadic, with no discernible pattern across specific monitoring wells. Therefore, DEHP detected in groundwater above TOGS groundwater standards is not discussed further in Section 5.

- Fine-grained material analytical results for the FIS are presented in **Table 5-13**.
- Fine-grained material analytical results for the current storm sewer catch basins are presented in **Table 5-14**.

5.1 Site Areas – Associated Areas of Concern

5.1.1 Northern Athletic Fields

AOCs identified within the NAF (**Figure 1-4**), including AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-2C (Drywell Near Building 49), AOC-3A (1979 Drywell Field), AOC-6 (Concrete Vaults), AOC-7 (Drywell Structures), AOC-10A (Contaminated Subsurface Soils), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-16 (Machine Shop Area), AOC-19 (former drum nest area), and AOC-20 (Historical Water Line) were evaluated through RI soil and groundwater investigations. Soil and groundwater investigation results were also used to

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design the soil removal in the NAF as part of IRM #5A2. Soil results are presented on **Figures 5-4A-H** for surface soil and two-foot intervals to the water table (16 ft bgs). Groundwater investigation results are presented on **Figures 5-5A-1** through **5-5D-2**. Soil results for samples collected below the water table are presented on **Figures 5-6A-T**. AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-19 (Drum Nest Area) and AOC-20 (Historical Water Line) were identified and evaluated using additional information collected during implementation of IRM #5A2.

5.1.2 Football Field Complex

AOCs identified within the FFC (**Figure 1-4**) including AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-3 (1979 Storm Sewer), AOC-6 (Concrete Vaults), AOC-8 (Westinghouse Transformer Spill near Building 28A), AOC-9 (Oil Storage and Handling), AOC-10B (Contaminated Subsurface Soils), AOC-10C (Contaminated Subsurface Soils), AOC-10D (Contaminated Subsurface Soils), AOC-11 (VOC- and Petroleum-Impacted Groundwater), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), and AOC-16 (Machine Shop Area) were evaluated through RI soil and groundwater investigations. AOC-2 was also evaluated through the RI sewer investigation (records review, test pitting, camera surveys). AOC-3 was also evaluated through the RI sewer investigation (catch basin and manhole inspection and sampling). Soil and groundwater investigation results were also used to design the soil removal in the FFC as part of IRM #4, IRM #4A, and IRM #5. Soil results associated with the RI are presented on **Figures 5-7A-H** for surface soil and two-foot intervals to the water table (16 ft bgs). Groundwater investigation results are presented on **Figures 5-8A-1** through **5-8D-2**. Soil results for samples collected below the water table are presented on **Figures 5-9A-P**. AOCs within the FFC were also evaluated using information collected during implementation of IRM #3, IRM #4, IRM #4A, and IRM #5.

5.1.3 Main Parking Lot and Tennis Courts

AOCs identified in the Main Parking Lot and Tennis Courts area including AOC-3 (1979 Storm Sewer), AOC-11 (VOC- and Petroleum Impacted Groundwater), AOC-14 (Power Washer, Rust Prevention Dip Operation), and AOC-16 (Machine Shop Area) were evaluated through RI soil and groundwater investigations, building on data collected during the SC and reported in the SC Report (Geosyntec, 2017c). Soil results are presented on **Figures 5-10A-H** for surface soil and two-foot intervals to the water table (16 ft bgs). Groundwater investigation results are presented on **Figures 5-11A-1** through **5-11D-2**. Soil results for samples collected below the water table are presented on **Figures 5-12A-B**.

5.1.4 Rear Parking Lot

AOCs identified in the Rear Parking Lot including AOC-3 (1979 Storm Sewer) and AOC-17 (Possible Disposal Areas) were evaluated through RI soil and groundwater investigations, building on data collected during the SC. Soil and groundwater investigation results were also used to design the soil removal in the Rear Parking Lot as part of IRM #2. Pre-IRM Soil results are presented on **Figures 5-13A-H** for surface soil and two-foot intervals to the water table (16 ft bgs). Groundwater investigation results are presented on **Figures 5-14A-1** through **5-14D-2**. Soil results

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for samples collected below the water table are presented on **Figures 5-15A-B**. AOCs within the Rear Parking Lot were also evaluated using information collected during implementation of IRM #2 (Geosyntec, 2019g).

5.1.5 EHS Building

AOCs that encompass the EHS building (AOC-1) include sub-slab vapor (AOC-1A) and indoor air (AOC-1B) that were evaluated using VOC data from previous VI investigations, the SVIA, ISMP post-mitigation sampling and analysis of indoor air, and ISMP remedial sampling of SSD System effluent. The SVIA program approved by NYSDEC and implemented in 2018 evaluated sub-slab vapor (AOC-1A) and indoor air (AOC-1B) to further assess the VI potential at EHS. Results of the SVIA program were reported in the revised SVIA Report dated 28 March 2019 (Geosyntec, 2019e) approved by NYSDEC with contingencies on 31 January 2019 (**Appendix A**). AOCs within the footprint of the EHS building **(**see **Figure 1-4**) including AOC-2E (Waste Pit near Building 44), AOC-4 (Earthen Waste Pits near EHS Gym and Pool), AOC-5 (Sludge Tanks/Beds/Brick Pits near Building 64), AOC-6 (Concrete Vaults), AOC-7 (Drywell Structures), AOC-9 (Oil Storage and Handling, Oil House, Waste Oil Storage, and Quench Oil Reservoir), AOC-10D (Contaminated Subsurface Soils), AOC-11 (VOC- and Petroleum Impacted Groundwater), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-13 (Metals Cleaning, Vapor Degreaser, and Solvent Still), AOC-15 (Wire Pickling Area), AOC-16 (Machine Shop Area), and AOC-17 (Possible Disposal Areas) were evaluated using conventional indoor air, outdoor air, and sub-slab vapor sampling data and HVS data, as well as data from previous soil and groundwater investigations up and downgradient of the EHS Building and the RI groundwater investigation. It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

New York State's revised "Guidance for Evaluating Vapor Intrusion in The State of New York" (VI Guidance) contains Air Guideline Values for several compounds "to help guide decisions about the nature of efforts to reduce exposure to the chemical" (NYSDOH, 2017). The VI Guidance also includes Soil Vapor/Indoor Air Decision Matrices that recommend a range of possible actions to address VI potential under various circumstances. The Soil Vapor/Indoor Air Decision Matrices were updated most recently in 2024 (NYSDOH, 2024). The Soil Vapor/Indoor Air Decision Matrices were used to evaluate the sub-slab vapor and indoor air results discussed in Sections 5.2.1 and 5.2.2, respectively, in Section 5.2.3.

5.2 AOC Investigation Findings

5.2.1 AOC-1A (Sub-Slab Vapor)

Sub-slab vapor at EHS has been investigated since 2000. NYSDOH conducted soil gas sampling below the floor at EHS in 2000. TCE, PCE and 1,1,1-TCA were detected in sub-slab vapor in Room 151A, the Gymnasium, the pool filter room, and the boiler room. NYSDOH recommended that ECSD consider an indoor air quality action plan consistent with that recommended by USEPA

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(NYSDOH, 2003). Results are compared to current NYSDOH Matrix Values on **Figures 5V-2A-F**. The extent of sample locations with a NYSDOH matrix outcome of "Mitigate" is delineated and provided on applicable figures.

ECSD collected sub-slab vapor samples at 14 locations in December 2009 as part of the Indoor Air Quality Action Plan included in the EMP. Results were presented in the 2010 NYSDOH Health Consultation (NYSDOH, 2010) and are included on Figures **5V-2A-F**. TCE was detected at a concentration of 2,100 µg/m^3 below Room 127 and 460 µg/m^3 below the pool filter room, above the Soil Vapor/Indoor Air Decision Matrix 1 value for mitigation of 250 µg/m^3 issued in 2006 (NYSDOH, 2006). 1,1,1-TCA was detected at a concentration of 23,000 µg/m^3 below the east side of the Gymnasium (SV-GM EAST), above the Soil Vapor/Indoor Air Decision Matrix value for mitigation of 1,000 µg/m^3 issued in 2006 (NYSDOH, 2006). NYSDOH recommended adjustments to the building HVAC system in the area of Room 127 to reduce the concentration of TCE in indoor air and installation of a sub-slab vapor mitigation system in the Gymnasium as part of planned renovations (NYSDOH, 2010). ECSD installed a sub-slab vapor mitigation system in the EHS Gymnasium as part of a remodeling project conducted in 2010 (Sterling, 2011) as discussed in Section 3.1.2.

In July 2014, Unisys completed a vapor intrusion assessment that included collection of sub-slab vapor samples and collection of high-volume sampling data. The results of this assessment were described in the Vapor Intrusion Assessment and Mitigation Report which was submitted to the NYSDEC in October 2014. The F Wing was the only area Unisys sampled in 2014 where sub-slab sampling results exceeded the concentrations at which the associated NYSDOH Vapor Intrusion Decision Matrices guideline recommends further actions (monitoring or mitigation) to address potential exposures due to VI. A SVIA program was implemented between 27 and 29 June 2018 in accordance with the SVIA work plan submitted to NYSDEC and NYSDOH on 19 June 2018 (SVIA Work Plan; Geosyntec, 2018a) and approved by NYSDEC on 21 June 2018 (**Appendix A**). The SVIA was performed at the request of NYSDEC to further assess the VI potential at EHS.

Sub-slab vapor VOC results for samples collected by Unisys in 2014 and 2018 are summarized in **Table 5-2**. Results for detected NYSDOH Soil Vapor/Indoor Air Decision Matrices compounds are shown on **Figure 5V-1Ai – 5V-2F**. HVS testing was conducted to identify elevated VOC concentrations that might exist between or beyond probe locations. VOC detections in HVS discharge samples are provided in **Table 5-3**. As reported in **Table 5-2**, TCE was present in sub-slab samples collected in 2014 at concentrations above NYSDOH Soil Vapor/Indoor Air Decision Matrix mitigation guideline value of 250 µg/m^3 (NYSDOH, 2006) in the F- wing of the building at four locations (Room 130, Room 127, Room 125, and Room 124). As reported in **Table 5-3**, detections in HVS samples at the corresponding room locations listed above decreased over time, suggesting that the HVS concentrations measured were representative of actual conditions in the area tested. The current NYSDOH Soil Vapor/Indoor Air Decision Matrix mitigation guideline value for TCE is 60 µg/m^3 (NYSDOH, 2024). Cis-1,2-DCE was present in sub-slab vapor samples collected in 2014 at Room 127 and Room 130 at concentrations of 2,000 µg/m^3 and 83 µg/m^3, respectively, above the current NYSDOH Soil Vapor/Indoor Air Decision Matrix mitigation guideline value for cis-1,2-DCE of 60 µg/m^3 (NYSDOH, 2024). Based on those detections of TCE

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and cis-1,2-DCE, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. Other VOC detections in sub-slab vapor in 2014 did not exceed the NYSDOH Soil Vapor/Indoor Air Decision Matrix mitigation guideline values in effect at the time.

TCE was detected in 2018 in the sub-slab vapor grab sample in Room 148 in the Music Wing at a concentration of 160 µg/m^3 and in the HVS samples at a concentration of 380 µg/m^3, above the NYSDOH Soil Vapor/Indoor Air Decision Matrix A sub-slab vapor guideline value of 60 µg/m^3. TCE was detected in the Room 148 HVAC occupied indoor air sample at a concentration of 0.37 µg/m^3 but was not detected in the companion HVAC unoccupied sample at a reporting limit of 0.17 µg/m^3. The source of the TCE detected in indoor air in Room 148 was unknown but could be due to VI. Mitigation was recommended, and a sub-slab vapor mitigation system was installed in the Music Wing in August 2018 as discussed in Section 3.1.5.

Other VOCs included in NYSDOH Soil Vapor/Indoor Air Decision Matrices A, B, and C detected in indoor air included cis-1,2-DCE, carbon tetrachloride (CT), PCE, 1,1,1-TCA, and methylene chloride (MC). Detections of cis-1,2-DCE, 1,1,1-TCA, and MC in indoor air were attributed to background sources and not VI because those compounds were not detected in nearby grab sub-slab vapor samples or HVS samples. PCE was detected in two sub-slab samples at concentrations ranging from 11 µg/m^3 to 14 µg/m^3, below the NYSDOH Soil Vapor/Indoor Air Decision Matrix A sub-slab vapor guideline value of 1,000 µg/m^3, and in outdoor air. PCE's presence in indoor and outdoor air samples was attributed to background sources, not VI. Detections of CT in indoor air were attributed to exterior background sources due to detections in almost all indoor and outdoor air samples.

NYSDOH published Soil Vapor/Indoor Air Decision Matrices D, E, and F (NYSDOH, 2024) in February 2024. Benzene, ethylbenzene, heptane, hexane, toluene, o-xylene and m- and p-xylene were detected in grab sub-slab vapor samples (**Table 5-2**) or HVS samples (**Table 5-3**). There were no detections in the 2018 SVIA samples that exceeded NYSDOH Soil Vapor/Indoor Air Decision Matrices D, E, and F guideline values for sub-slab vapor for mitigation.

Sub-slab vapor concerns (AOC-1A) have been evaluated to address potential VI impacts to indoor air. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. Sub-slab vapor mitigation systems are maintained under the ISMP. Detections of VOCs in SSD effluent discussed in Section 6.1 indicate that VOCs were present in sub-slab vapor at the time of sampling.

5.2.2 AOC-1B (Indoor Air/Outdoor Air)

Indoor air quality at EHS has been investigated since 1997. NYSDEC conducted air sampling at EHS in July 1997 and April 2000 and found no indoor air contamination problem at the school. NYSDEC conducted additional air sampling for organic vapors in May 2000. Results were presented in the 2003 NYSDOH Health Consultation included in **Appendix B**. Chlorinated hydrocarbon compounds were detected but detections were not above background levels for indoor air. NYSDOH recommended that ECSD consider an indoor air quality action plan consistent with that recommended by USEPA (NYSDOH, 2003).

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ECSD collected indoor air samples at eight locations in December 2009 as part of the Indoor Air Quality Action Plan included in the EMP. Results were presented in the 2010 NYSDOH Health Consultation (NYSDOH, 2010) included in **Appendix B**. TCE was detected at a concentration of 2.4 µg/m^3 in Room 127, below the Soil Vapor/Indoor Air Decision Matrix 1 value for mitigation of 5 µg/m^3 issued in 2006 (NYSDOH, 2006) but above the Soil Vapor/Indoor Air Decision Matrix A value of 2 µg/m^3 for mitigation issued in 2015 (NYSDOH, 2017). 1,1,1-trichloroethane (1,1,1-TCA) was detected at a concentration of 2.4 µg/m^3 in the Gymnasium, below the Soil Vapor/Indoor Air Decision Matrix 2 value for mitigation of 3 µg/m^3 issued in 2006 (NYSDOH, 2006) and maintained in the Soil Vapor/Indoor Air Decision Matrix B value for mitigation issued in 2017 (NYSDOH, 2017). Detections of 1,1-dichloroethene were below the NYSDOH VI Matrix guideline value (1 µg/m^3) and were associated with detections in outdoor air that enters the school (NYSDOH, 2010).

Indoor air and outdoor air VOC results for samples collected by Unisys in 2014 and 2018 are summarized in **Tables 5-1A** and **5-1B,** respectively. Results for detected NYSDOH Soil Vapor/Indoor Air Decision Matrices compounds are shown on **Figures 5V-1Ai – 5V-2F**. No indoor air sample collected by Geosyntec in 2014 and 2018 had detected concentrations that exceeded any of the respective NYSDOH Guideline values for mitigation presented in NYSDOH Soil Vapor/Indoor Air Decision Matrices A, B, and C[1] in effect at the time (NYSDOH, 2006 and NYSDOH, 2017). As discussed in Section 3.1, sub-slab vapor mitigation systems were installed in the F-Wing in 2014 and the Music Wing in 2018 in response to detections of TCE in sub-slab vapor discussed in the next section but indoor air concentrations of TCE were below the guideline value for mitigation in effect at the time, i.e., 5 µg/m^3 in 2014 and 1 µg/m^3 in 2018[2]. TCE was detected in indoor air in the F wing of the building at five (5) locations (Room 130, Room 127, Room 125, Room 124 and the Hallway outside of the Guidance offices) in 2014, with concentrations ranging from 0.18 µg/m^3 to 1.9 µg/m^{3}all below the indoor guideline of 5 µg/m^3. In 2018, TCE was detected in Room 148 HVAC occupied indoor air sample at a concentration of 0.37 µg/m^3 but was not detected in the companion HVAC unoccupied sample at a reporting limit of 0.17 µg/m^3.

NYSDOH published Soil Vapor/Indoor Air Decision Matrices D, E, and F[3] (NYSDOH, 2024) in February 2024. NYSDOH Soil Vapor/Indoor Air Decision Matrices D, E, and F compounds detected in indoor air included benzene, ethylbenzene, cyclohexane, isooctane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, o-xylene, m- and p-xylene, heptane, hexane, and

[1] Matrix A: carbon tetrachloride, 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene; Matrix B: methylene chloride, tetrachloroethene, 1,1,1-trichloroethane; and Matrix C: vinyl chloride (NYSDOH, 2017).

[2] NYSDOH Soil Vapor/Indoor Air Decision Matrix indoor air guideline value for mitigation for TCE was established at 5 µg/m^3 in 2006 (NYSDOH, 2006) and then decreased to 1 µg/m^3 in 2017 (NYSDOH, 2017).

[3] Matrix D: Benzene, Ethylbenzene, Naphthalene, Cyclohexane, Isooctane (2,2,4-Trimethylpentane), 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, o-Xylene; Matrix E: m, p-Xylene, Heptane, Hexane; and Matrix F: Toluene (NYSDOH, 2024).

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toluene (**Table 5-1A**). There were no detections in the 2018 SVIA indoor air samples that exceeded the 2024 NYSDOH Soil Vapor/Indoor Air Decision Matrices D, E, and F guideline values for indoor air for mitigation.

NYSDOH collected air samples for PCB analyses in Room 138, the boys' locker room and the library in July 2000 and in Room 151 in August 2000. No PCB Aroclors were detected at the detection limit of 0.02 µg/m^3 (NYSDOH, 2003). Geosyntec collected indoor and outdoor air samples for PCB analyses during the August and December 2021 sampling events in accordance with ISMP Amendment #2 dated 20 July 2021 (Geosyntec, 2021f) at sample locations presented on **Figure 3-3**. Analytical results are summarized in **Table 6-1E**. Reflecting a conservative approach, indoor air PCB analytical results were compared to the USEPA Exposure Levels for Evaluating PCBs in Indoor School Air, Ages 1 to less than 2 years old (USEPA PCB Exposure Levels; USEPA, 2024). Three PCB compounds (Aroclors 1242, 1248, and 1260) were detected at concentrations ranging from 0.00035J µg/m^3 (estimated) to 0.0035J µg/m^3, which are all significantly below the USEPA PCB Exposure Level of 0.1 µg/m^3.

Indoor air quality concerns at EHS due to historic detections in sub-slab vapor and adjacent soils have been addressed by evaluations of VOCs and PCBs in indoor air. VOCs and PCBs have not been detected at concentrations above NYSDOH and USEPA guidelines. Furthermore, potential VI concerns have been mitigated by the installation of sub-slab vapor mitigation systems discussed in Section 3.1. Sub-slab vapor mitigation systems and the integrity of interior floors are maintained and VOC levels in indoor air are monitored under the ISMP.

5.2.3 AOC-1A/1B NYSDOH Matrix Evaluation

A summary of sub-slab vapor results evaluated in accordance with current NYSDOH Matrix Guidelines is provided for each Matrix below, including data collected by others prior to the VI assessment conducted in 2014. The Soil Vapor/Indoor Air Decision Matrices recommends a range of possible actions to address the potential for VI under various circumstances contingent upon sub-slab vapor and indoor air concentrations (i.e. mitigate, monitor, or no further action). The NYSDOH decision-matrix criteria for mitigation have been revised over time. Application of the current criteria therefore does not indicate that these samples would have required mitigation under the guidance in effect when they were collected.

Matrix A

Matrix A Compounds include TCE, cis-1,2-DCE, 1,1-DCE, CT. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

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Soil Vapor/Indoor Air Matrix A (Trichloroethene, cis-1,2-Dichloroethene, 1,1-Dichloroethene, Carbon Tetrachloride)			
	Indoor Air Concentration of Compound (µg/m^3)		
Sub-Slab Vapor Concentration (µg/m^3)	<0.2	0.2 to < 1	1 and above
<6	No further action	No further action	Mitigate
6 to <60	No further action	Monitor	Mitigate
60 and above	Mitigate	Mitigate	Mitigate

Matrix A compounds detected in sub-slab vapor are summarized on **Table 5-2** and **Figure 5-3A**. Matrix A compounds detected in indoor air are summarized on **Table 5-1A** and **Figures 5V-1Ai and 5V-1Aii**. Compounds were evaluated in accordance with Matrix A based on sub-slab vapor concentrations and associated indoor air concentrations. CT is not shown in the evaluation below because CT was not detected in the sub-slab vapor samples collected. A summary of sample locations with a matrix outcome of Mitigate is presented below.

EHS Building Location	Sub-Slab Vapor Sample	Parameter	Sub-Slab Concentration	Indoor Air Sample	Indoor Air Concentration	Recommended Action
Boiler Room*	SUB-SLAB BOILER ROOM	1,1-DCE	< 1	NA	-	NFA
		c-1,2-DCE	< 1		-	NFA
		TCE	150		-	Mitigate
	SV-BR	1,1-DCE	<0.6	NA	-	NFA
		c-1,2-DCE	< 0.6		-	NFA
		TCE	97		-	Mitigate
Pool Filter Room*	SUB-SLAB POOL FILTER ROOM	1,1-DCE	2.6	NA	-	NFA
		c-1,2-DCE	1.1		-	NFA
		TCE	325		-	Mitigate
	SV-PF	1,1-DCE	1.2	IA-PF	1.1	Mitigate
		c-1,2-DCE	3.2		< 0.6	NFA
		TCE	460		1.4	Mitigate
Gymnasium	SV-GYM-EAST	1,1-DCE	240	IA-GYM	<0.6	Mitigate
		c-1,2-DCE	< 0.6		<0.6	NFA
		TCE	28		0.22	Monitor
Room 124	SSHS-05-SS	1,1-DCE	<36U	SSHS-05-IA	<0.063U	NFA
		c-1,2-DCE	<36U		<0.13U	NFA
		TCE	2100		0.18	Mitigate
Room 125	SSHS-04-SS	1,1-DCE	**<11U**	SSHS-04-IA	<0.061U	NFA
		c-1,2-DCE	**<11U**		<0.12U	NFA
		TCE	390		0.28	Mitigate
Room 127	SV-127	1,1-DCE	<0.6	IA-127	0.69	NFA
		c-1,2-DCE	300		<0.6	Mitigate
		TCE	2100		2.4	Mitigate
	SHSS-03-SS	1,1-DCE	**<91U**	SSHS-03-IA	<0.063U	NFA
		c-1,2-DCE	2000		0.25	Mitigate
		TCE	39000		1.9	Mitigate
Room 130	SSHS-02-SS	1,1-DCE	**<18U**	SSHS-02-IA	<0.064U	NFA
		c-1,2-DCE	83		<0.13U	Mitigate
		TCE	7300		0.51	Mitigate

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EHS Building Location	Sub-Slab Vapor Sample	Parameter	Sub-Slab Concentration	Indoor Air Sample	Indoor Air Concentration	Recommended Action
Room 148	SS-148	1,1-DCE	< 4.4 U	IA-148	<0.059U	NFA
		c-1,2-DCE	< 4.4 U		<0.12U	NFA
		TCE	160		0.37	Mitigate

*Unoccupied area. Rooms are used for chemical storage.
Concentrations are presented in µg/m^3
NA – Not available
NFA – No further action
Blue shaded cells represent sub-slab vapor samples above NYSDOH matrix value of 60 µg/m^3 or indoor air samples above NYSDOH matrix value of 1 µg/m^3.
Samples with detection limits exceeding applicable monitor guidance concentrations are shown in orange.

The extent of these sample locations with a recommended action of Mitigate is shown on **Figure 5-3A**. With the exception of the boiler room and pool filter room, these sample locations all fall within SSD System areas that have been mitigated. The boiler room and pool filter room are used for chemical storage and are not regularly occupied.

An indoor air sample collected from the library (IA-LIBRARY) in December 2009 had 1,1-DCE detected at 1 µg/m3 (**Table 5-1A**). The detection of 1,1-DCE in indoor air collected from the library was an isolated occurrence that was not reproduced in previous or subsequent sampling events. 1,1-DCE was non-detect for indoor air samples collected from the library in 1997, 2000, 2014, and 2018. The presence of 1,1-DCE in indoor air is unlikely related to vapor intrusion as 1,1-DCE was not detected in the sub-slab samples collected from the library in 2009 and 2014.

In Room 151A, 1,1,-DCE was detected at 1 µg/m^3 in December 2009 (**Table 5-1A**). The detection of 1,1-DCE in indoor air collected from Room 151A was an isolated occurrence that was not reproduced in subsequent sampling events. 1,1,-DCE was non-detect in Room 151A in 2018. c-1,2,DCE was detected at 1.6 µg/m3 in June 2018 in Room 151A (**Table 5-1A**). This detection occurred with the HVAC system operating in unoccupied mode. The sample collected from Room151A with the HVAC system in occupied mode was non-detect. The presence of 1,1-DCE and c-1,2-DCE in indoor air is unlikely related to vapor intrusion as 1,1-DCE and c-1,2-DCE was not detected in any of the sub-slab samples collected from nearby Rooms 151A or 148 in 2009 and 2018. In the sub-slab sample collected from Room 151A in 2000, TCE was detected at 170 µg/m3 (**Table 5-2**). The detection of TCE above 60 µg/m3 collected from Room 151A was an isolated occurrence that was not reproduced in subsequent sampling events. TCE in sub-slab vapor from Room 151A was 4.2 µg/m3 in 2009 and non-detect in 2018.

For Matrix A, the outcome for all other sample locations was no further action.

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Matrix B

Matrix B Compounds include PCE, 1,1,1-TCA, and Methylene Chloride. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

Soil Vapor/Indoor Air Matrix B (Tetrachloroethene (PCE), 1,1,1-Trichloroethane (1,1,1-TCA), Methylene Chloride)			
	Indoor Air Concentration of Compound (µg/m³)		
Sub-Slab Vapor Concentration (µg/m³)	<3	3 to <10	10 and above
<100	No further action	No further action	Mitigate
100 to <1,000	No further action	Monitor	Mitigate
1,000 and above	Mitigate	Mitigate	Mitigate

Matrix B compounds detected in sub-slab vapor are summarized on **Table 5-2** and **Figure 5-3B**. Matrix B compounds detected in indoor air are summarized on **Table 5-1A** and **Figures 5V-1Bi and 5V-1Bii**. Compounds were evaluated in accordance with Matrix B based on sub-slab vapor concentrations and associated indoor air concentrations. A summary of sample locations with a matrix outcome of Mitigate is presented below.

EHS Building Location	Sub-Slab Vapor Sample	Parameter	Sub-Slab Concentration	Indoor Air Sample	Indoor Air Concentration	Recommended Action
Gymnasium	SV-GYM-EAST	PCE	54	IA-GYM	<1	NFA
		1,1,1-TCA	23000		2.4	Mitigate
		Methylene Chloride	<0.53		<0.53	NFA

Concentrations are presented in µg/m³
NFA – No further action
Blue shaded cells represent sub-slab vapor samples above NYSDOH matrix value of 1,000 µg/m³ or indoor air samples above NYSDOH matrix value of 10 µg/m³.

The extent of these sample locations with a recommended action of Mitigate is shown on Figure **5-3B**. For Matrix B, the outcome for all other sample locations was no further action.

Matrix C

Matrix C compounds include Vinyl Chloride. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

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Soil Vapor/Indoor Air Matrix C (Vinyl Chloride)		
	Indoor Air Concentration of Compound (µg/m^3)	
Sub-Slab Vapor Concentration (µg/m^3)	<0.2	0.2 and above
<6	No further action	Mitigate
6 to <60	Monitor	Mitigate
60 and above	Mitigate	Mitigate

Vinyl Chloride was non-detect in all collected indoor air samples (**Table 5-1A**). In sub-slab vapor, vinyl chloride was non-detect or <3 µg/m^3 in all samples (**Table 5-2**). The outcome for Matrix C is therefore no further action.

Matrix D

Matrix D Compounds include benzene, ethylbenzene, naphthalene, cyclohexane, 2,2,4-trimethylpentane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and o-xylene. Naphthalene was not collected for indoor air or sub-slab vapor samples as part of the site investigation. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

Soil Vapor/Indoor Air Matrix D (Benzene, ethylbenzene, naphthalene, cyclohexane, isooctane (2,2,4-trimethylpentane), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, o-xylene)			
	Indoor Air Concentration of Compound (µg/m^3)		
Sub-Slab Vapor Concentration (µg/m^3)	<2	2 to <10	10 and above
<60	No further action	No further action	Mitigate
60 to <600	No further action	Monitor	Mitigate
600 and above	Mitigate	Mitigate	Mitigate

Matrix D compounds detected in sub-slab vapor are summarized on **Table 5-2** and **Figure 5-3D**. Matrix D compounds detected in indoor air are summarized on **Table 5-1A** and **Figures 5V-1Di and 5V-1Dii**. Compounds were evaluated in accordance with Matrix D based on sub-slab vapor concentrations and associated indoor air concentrations.

Sub-slab vapor concentrations were non-detect or <60 µg/m^3 with the exception of SSHS-09-SS (Hallway Outside Library) and SS-135-UN-DUP (Room 135). Benzene was detected at 86 µg/m^3 at SSHS-09-SS (Hallway Outside Library). Ethylbenzene was detected at 68 µg/m^3 at SSHS-09-

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SS (Hallway Outside Library) and 150 µg/m^3 at SS-135-UN-DUP (Room 135). 1,2,4-trimethylbenzene was detected at 72 µg/m^3 at SSHS-09-SS (Hallway Outside Library). o-Xylene was detected at 150 µg/m^3 at SS-135-UN-DUP (Room 135). Indoor air concentrations for Matrix D associated with these locations were <2 µg/m^3, therefore the matrix outcome for these sample locations was no further action.

An indoor air sample collected from the library (IA-LIBRARY) in November 1997 had ethylbenzene detected at 10.36 µg/m^3 (**Table 5-1A**). The detection of ethylbenzene in indoor air collected from the library was an isolated occurrence that was not reproduced in subsequent sampling events. Ethylbenzene was non-detect for indoor air samples collected from the library in 2009, 0.5 µg/m^3 in 2014, and 0.15 µg/m^3 in 2018 (0.45 µg/m^3 in unoccupied mode). An indoor air sample collected from the library (IA-LIBRARY) in August 2000 had 1,2,4-trimethylbenzene detected at 75 µg/m^3 and 1,3,5-trimethylbenzene detected at 19 µg/m^3 (**Table 5-1A**). The detection of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene in indoor air collected from the library was an isolated occurrence that was not reproduced in subsequent sampling events. 1,2,4-trimethylbenzene was non-detect in 2009 and 2018 and 0.96 µg/m^3 in 2014. 1,3,5-trimethylbenzene was non-detect in 2009, 2014 and 2018. Ethylbenzene (1.3 µg/m^3), 1,2,4-trimethylbenzene (2.5 µg/m^3), 1,3,5-trimethylbenzene (0.9 µg/m^3) were not observed above NYSDOH guidance values in the sub-slab vapor sample collected from the library in 2009.

For Matrix D, the outcome for all other sample locations was no further action.

Matrix E

Matrix E compounds include m,p-xylene, heptane, hexane. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

Soil Vapor/Indoor Air Matrix E (m,p-xylene, heptane, hexane)			
	Indoor Air Concentration of Compound (µg/m^3)		
Sub-Slab Vapor Concentration (µg/m^3)	<6	6 to <20	20 and above
<200	No further action	No further action	Mitigate
200 to <2,000	No further action	Monitor	Mitigate
2,000 and above	Mitigate	Mitigate	Mitigate

Matrix E compounds detected in sub-slab vapor are summarized on **Table 5-2** and **Figure 5-3E**. Matrix E compounds detected in indoor air are summarized on **Table 5-1A** and **Figures 5V-1Ei and 5V-1Eii**. Compounds were evaluated in accordance with Matrix E based on sub-slab vapor concentrations and associated indoor air concentrations.

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Sub-slab vapor concentrations were non-detect or <200 µg/m^{3}with the exception of SSHS-09-SS (Hallway Outside Library) and SS-135-UN-DUP (Room 135). m,p-xylene was detected at 300 µg/m^3 at SSHS-09-SS (Hallway Outside Library) and 410 µg/m^3 at SS-135-UN-DUP (Room 135). Indoor air concentrations for m,p-xylene associated with these locations was <6 µg/m^3, therefore the matrix outcome for these sample locations was no further action.

An indoor air sample collected from the library (IA-LIBRARY) in November 1997 had m,p-Xylene detected at 21.78 µg/m^3 (**Table 5-1A**). The detection of m,p-Xylene above 20 µg/m^3 in indoor air collected from the library was an isolated occurrence that was not reproduced in subsequent sampling events in 2000, 2009, 2014, and 2018.

For Matrix E, the outcome for all other sample locations was no further action.

Matrix F

Matrix F compounds include toluene. The recommended actions to address various combinations of detected concentrations of the compounds in the indoor air and associated sub-slab samples are:

Soil Vapor/Indoor Air Matrix F (Toluene)			
	Indoor Air Concentration of Compound (µg/m^3)		
Sub-Slab Vapor Concentration (µg/m^3)	<10	10 to <50	50 and above
<300	No further action	No further action	Mitigate
300 to <3,000	No further action	Monitor	Mitigate
3,000 and above	Mitigate	Mitigate	Mitigate

Matrix F compounds detected in sub-slab vapor are summarized on **Table 5-2** and **Figure 5-3F**. Matrix F compounds detected in indoor air are summarized on **Table 5-1A** and **Figures 5V-1Fi and 5V-1Fii**. Compounds were evaluated in accordance with Matrix F based on sub-slab vapor concentrations and associated indoor air concentrations.

Sub-slab vapor concentrations for toluene were non-detect or <300 µg/m^3 with the exception of SS-135-UN (Room 135) detected at 540 µg/m^3 and SS-135-UN-DUP (Room 135) detected at 2,900 µg/m^3. Indoor air concentrations of toluene associated with these locations was <10 µg/m^3, therefore the matrix outcome for these sample locations was no further action.

An indoor air sample collected from the library (IA-LIBRARY) in November 1997 had toluene detected at 111.77 µg/m^3 (**Table 5-1A**). The detection of toluene above 50 µg/m^3 in indoor air collected from the library was an isolated occurrence that was not reproduced in subsequent sampling events in 2000, 2009, 2014, and 2018.

For Matrix F, the outcome for all other sample locations was no further action.

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5.2.4 AOC-2 (Pre-1979 Combined Industrial/Storm Sewer)

The FIS located along the eastern property (**Figure 1-4**), identified as part of AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), was evaluated through inline camera surveys, test pitting, sewer content (fine-grained material) sampling, and soil investigation as part of the RI and the FFC PDI. Inline camera surveys and test pitting were used to identify the extent of the FIS as discussed in Section 2.4. Test pitting was used to expose FIS segments and to characterize the FIS contents. Soil investigations adjacent to the FIS were used to identify potential releases to surrounding soils.

Fine-grained materials were collected from inside the FIS in December 2019 from Segment 3 (sample ID "Test Pit 3" from Test Pit 3b) and from Segment 4 (sample ID "Test Pit 2") and analyzed for COPCs. The locations of the test pits are shown on **Figure 2-4**, and test pit logs are provided in **Appendix H**. The results from those samples and results from previous sampling of FIS contents during the SC are presented on **Figure 5-16** and in **Table 5-13**. Results are compared to the following screening criteria (**Table 5-13**) to evaluate the FIS as a potential source for releases to surrounding soils and transport to off-Site surface waters:

- Potential transport to off-Site surface waters
  - NYSDEC Class C Sediment Guidance Values (SGVs) (NYSDEC, 2014)
- Potential release to surrounding soils
  - Restricted Residential SCOs
  - PoG SCOs; and
  - 100 mg/kg total PAHs
- Potential to exhibit the characteristic of toxicity
  - 20 times TCLP threshold for RCRA metals other than lead
  - 200 times TCLP threshold for lead (as described in NYSDEC approved Remedial Investigation Work Plan Amendment #1 [Geosyntec, 2020i]).
- NYS Regulated Waste
  - TSCA levels for total PCBs

Soil borings SSHS-B2771, SSHS-B2772, SSHS-B2773, and SSHS-B2774 were advanced on the Site to the depth of the FIS along Segments 2 and 3 between CB-24 and the southern end of the FFC. PCB results are presented on **Figure 5-16**, and full results are shown in **Table 5-13**. Additional soil borings installed off-Site to investigate the FIS will be presented in the Former Sperry Remington Site – North Portion 2 Site #c808054 RI. PCBs, metals, and SVOCs were detected in fine-grained material samples collected from Segment 2, Segment 3, and CB-28 at concentrations above NYSDEC Class C SGVs. However, the sewer inspections identified several obstructions and collapses that indicate that the migration pathway to surface water is incomplete. Historically, the FIS discharged to OS2 located on STCC property to the south.

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Total PCBs were detected at concentrations at or greater than TSCA levels in CB-24, in CB-28, and Test Pit 3b in Segment 3. Screening of metal detections for the potential to exhibit the characteristic of toxicity criteria showed lead and chromium detections at CB-24 and chromium and cadmium detections at CB-28 above the screening criteria, but metal detections were below the screening criteria in samples from Test Pit 2 and Test Pit 3b. Exceedances of Restricted Residential SCOs were detected for chromium, copper, lead, and nickel at CB-24; for arsenic, barium, cadmium, chromium, lead, mercury, and nickel at CB-28; for copper, lead, and nickel in Test Pit 2; and for copper and nickel in Test Pit 3b in Segment 3. Exceedances for PoG SCO were detected for chromium, copper, lead, and nickel at CB-24, arsenic, cadmium, chromium, lead, mercury, and nickel at CB-28, chromium, lead, and nickel at Test Pit 2, and chromium and nickel at Test Pit 3. Soil samples collected adjacent to Segments 2 and 3 had no detections of total PCBs above the Restricted Residential SCO of 1 mg/kg and no detections of cadmium, chromium, lead, mercury, or nickel above Restricted Residential SCOs or PoG SCOs. Arsenic was detected in sample SSHS-B2773-SUB-6-8 and SSHS-B2774-SUB-8-10 at concentrations of 17 and 21 mg/kg, respectively—above the Restricted Residential SCO and PoG SCO of 16 mg/kg. The source of arsenic is unknown. Arsenic detections were lower in the adjacent samples of fine-grained material in CB-24, Test Pit 2, and Test Pit 3b. Soil results do not indicate a release from the FIS to surrounding soils.

FIS removal was conducted during IRM #5, including removal of Segments 2 and 3 along the FFC boundary, Segments 4 and 5, Segment 7 within the FFC, and Segment 8 up to the IRM haul road, to remove potential sources of hazardous waste. The FIS segment between CB-28 and MH-2 east of the FFC was also removed. Although the soil investigation adjacent to Segments 2 and 3 did not indicate a release to surrounding soils, soils below the FIS were inaccessible. Confirmation sampling following FIS removal detected total PCBs at or above TSCA levels between 10-16 ft bgs on the west side of the FIS removal trench. Stepdown excavations were completed to approximately 17 ft bgs to remove the PCB-impacted soil and confirmation bottom samples were collected. COPCs remaining in place following FIS removal are discussed in Section 6.3.2. Segment 1 located in the northern portion of the FFC was abandoned in-place as part of the EHS 2020 stadium renovations. MH-1 was backfilled with NYSDEC approved imported fill. The sanitary sewer from Field House #1 discharges to a new sanitary sewer connection to South Main Street. Further details regarding FIS removal in the FFC are provided in the FFC IRM CCR (Geosyntec, 2026d).

Additional FIS removal was conducted in the NAF during IRM #5A2 including the removal of the portions of Segment 7 that extended north from the FFC into the NAF. The extent of Segment 7 was not known prior to IRM #5A2. During excavation and removal of a historical rail spur on the east central portion of the NAF on 12 December 2021, a section of 36-inch terracotta piping was uncovered at 8 feet bgs running north to south and believed to be the FIS. Further investigations of the FIS and lateral connections were conducted as part of IRM #5A2 as discussed in Section 2.4.3.4. Excavation and removal of the FIS began on 7 June 2022, where after visual observation of the interior extent of the 36-inch pipe, it was determined to connect to Segment 7 and continue approximately 10-15 feet beyond the NAF onto the FFC.

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Several FIS laterals ranging from 6 to 18-inches were identified during IRM #5A2 excavations prior to removal of Segment 7. When laterals were encountered, interior samples were collected as confirmation and waste characterization. Laterals identified within the areas noted above were managed as TSCA material in accordance with IRM #5A2. Laterals confirmed to be connected to the main 36-inch FIS were removed to its full extent or until it was no longer feasible in accordance with IRM #5A2. Two FIS laterals (FIS-LAT1 and FISLATSW) remain in place below the cover system as analytical results were below applicable SCOs and did not require removal. Further details regarding FIS removal in the NAF are provided in the NAF IRM CCR (Geosyntec, 2026g).

5.2.5 AOC-2A/2B (18" Clay Pipe and Drywell at SE Property Corner)

AOC 2A/2B are located outside the Revised BCP Site boundary. Investigations completed for AOC 2A/2B will be documented under the RI for the New BCP Site #c808054.

5.2.6 AOC-2C (Drywell Near Building 49)

AOC-2C is a former drywell near former Building 49 (**Figure 1-3**) located in the southeastern corner of the NAF (**Figure 1-4**). AOC-2C spatially overlaps with AOC-16-3 and AOC-3A-1. Historical records indicate that oil and plating waste was generated in Building 49. The location and construction of this feature is known based on historical site drawings. The depth of this former drywell relative to the water table (approximately 16 ft bgs) is unknown. Excavations within AOC-2C were completed up to 4 ft bgs as part of IRM #5A2, as discussed in Section 3.2.5. No drywell was observed during IRM #5A2 at this AOC. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-2C includes soil and groundwater and COPCs include PCBs, metals, SVOCs, and VOCs.

Potential impacts to AOC-2C have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-2C are shown compared to Restricted Residential SCOs on **Figures 5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Media of concern associated with AOC-2C includes soil and groundwater. COPCs associated with AOC-2C are PCBs, metals, SVOCs, and VOCs.

Soil and groundwater potentially associated with AOC-2C have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. PCBs were identified within AOC-2C above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary and are discussed in Section 6. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the off-Site Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-2C have been delineated vertically.

<u>AOC-2C Soil</u>

A total of 8 soil borings were installed within AOC-2C to a maximum depth of 22 ft bgs across multiple soil sampling events (Section 2.2). Within the NAF, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential

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SCOs. PCBs above the Restricted Residential SCO were detected up to a depth of 18 ft bgs, below the water table (approximately 16 ft bgs).

No soil boring samples within AOC-2C had PCBs detected above TSCA level (>= 50 mg/kg).

The following soil boring sample within AOC-2C had PCBs detected above the PoG SCO (>3.2 mg/kg) and Restricted Residential SCO (>1 mg/kg):

- SSHS-B572A-SUB-16-18 (3.23 mg/kg) – Remaining in place

The nature and extent of COPCs remaining in place in the NAF, including AOC-2C, is presented in Section 6.3.1. Nature and extent presented in Section 6.3.1 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified in AOC-2C. Restricted Residential SCO exceedances remaining in place within AOC-2C are horizontally delineated or inferred to the Revised BCP Site boundary. COPCs above Restricted Residential SCOs present within AOC-2C have been delineated vertically. Limits inferred to the Revised BCP Site boundary will be addressed as part of the off-Site RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

AOC-2C Groundwater

Potential impacts of AOC-2C on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring well MW-58 was installed within AOC-2C. Monitoring wells downgradient of AOC-2C include MW-98S, MW-98I, MW-99S, and MW-99I. Groundwater samples collected as part of the RI investigation of AOC-2C were analyzed for PCBs, metals, SVOCs and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at or downgradient of AOC-2C.

AOC-2C Summary

AOC-2C is a drywell near former Building 49. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-2C and to evaluate potential migration pathways in accordance with RI objectives. Analytical results indicate that PCBs were detected in soil above applicable SCOs up to depths of 18 ft bgs. VOCs, metals, and SVOCs were not identified above applicable SCOs. Soils exceeding applicable SCOs are not confined to AOC-2C and extend beyond the limits of the AOC. COPCs identified in soil are consistent with Site-wide impacts observed across the NAF, as further discussed in Section 6, and are not uniquely attributable to a discrete source at AOC-2C. Excavations completed up to 4 ft bgs in the southeast corner of the NAF did not identify a historical drywell associated with AOC-2C. Groundwater quality data demonstrate that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater

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exceedances above TOGS standards. PCBs were not detected above TOGS groundwater standards within or downgradient of AOC-2C.

Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-2C, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-2C on the Revised BCP Site.

5.2.7 AOC-2D (Manhole SW-73 Near Building 28A)

AOC-2D is former manhole SW-73 located in the FFC (**Figure 1-4**). This AOC is located near Former Building 28A (**Figure 1-3**). AOC-2D spatially overlaps with AOC-11. Soil borings collected as part of the RI investigation of AOC-2D are shown compared to Restricted Residential SCOs on **Figures 5-7A-H** (0-16 ft bgs) and **Figure 5-9A-P** (16-48 ft bgs). The depth of this former manhole relative to the water table is unknown. Excavations as part of IRM #3 completed in the FFC to approximately 16 ft bgs (approximate depth to water table) did not identify a manhole associated with AOC-2D.

Potential impacts to AOC-2D have been investigated through collection of soil and groundwater samples. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2.** As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-2D includes soil and groundwater and COPCs include PCBs.

Soil and groundwater potentially associated with AOC-2D have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. PCBs were identified within AOC-2D above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary and are discussed in Section 6. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-2D have been delineated vertically.

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AOC-2D Soil

A total of 27 soil borings were installed within AOC-2D to a maximum depth of 16 ft bgs across multiple soil sampling events (Section 2.2). Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. PCBs above Restricted Residential SCOs, PoG SCOs, and TSCA criteria were identified within AOC-2D. PCBs above the Restricted Residential SCO were detected up to a depth of 16 ft bgs.

The following soil boring samples within AOC-2D had PCBs detected above TSCA criteria (>=50 mg/kg):

- SSHS-B464-SUB-4-6 (109.3 mg/kg) – Excavated
- SSHS-B464-SUB-6-8 (1,056 mg/kg) – Excavated
- SSHS-B474-SUB-8-10 (378 mg/kg) – Excavated

- SSHS-B782-SUB-2-4 (306.3 mg/kg) – Excavated
- SSHS-B782A-SUB-2-4 (151.9 mg/kg) – Excavated
- SSHS-B792-SUB-12-14 (81 mg/kg) – Excavated
- SSHS-B792-SUB-8-10 (172.6 mg/kg) – Excavated

The following soil boring samples within AOC-2D had PCBs detected above the PoG SCO (>3.2 mg/kg), but below TSCA criteria (>=50 mg/kg):

- SSHS-B2243-SUB-12-14 (4.24 mg/kg) – Excavated
- SSHS-B803-SUB-4-6 (3.92 mg/kg) – Excavated
- SSHS-B803-SUB-8-10 (4.26 mg/kg) – Excavated

The following soil boring sample within AOC-2D had PCBs detected above the Restricted Residential SCO (>1 mg/kg), but below the PoG SCO (>3.2 mg/kg):

- SSHS-B474-SUB-10-12 (2.298 mg/kg) – Excavated

The nature and extent of COPCs remaining in place in the FFC including AOC-2D, are presented in Section 6.3.2. The nature and extent discussed in Section 6.3.2 include IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-2D. Restricted Residential SCO exceedances remaining in place have been delineated laterally to the extent practicable. In areas where impacts extend to or are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the off-Site RI for the Former Sperry Remington Site – North Portion 2 Site #c808054, as discussed in Section 6.

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AOC-2D Groundwater

Potential impacts of AOC-2D on groundwater quality were evaluated using samples collected from monitoring wells located adjacent to and downgradient of the AOC. Monitoring well MW-15S and MW-84S are located adjacent to AOC-2D. Temporary monitoring wells downgradient of AOC-2D include B3861S and B3861I which were analyzed for PCBs. PCBs were detected above TOGS groundwater standards for MW-15S in 2016 at 0.48 µg/L. MW-15S was decommissioned in preparation for excavation of IRM #1. MW-84S was installed as a replacement monitoring well in August 2021. PCBs were not detected above TOGS groundwater standards at MW-84S or downgradient at B3861S and B3861I; therefore, further assessment is not warranted.

AOC-2D Summary

AOC-2D is former manhole SW-73 near former Building 28A. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of PCBs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-2D and to evaluate potential migration pathways in accordance with RI objectives. Analytical results indicate that PCBs were detected in soil above applicable SCOs up to depths of 16 ft bgs. Soils exceeding applicable SCOs are not confined to AOC-2D and extend beyond the limits of the AOC.

COPCs identified in soil within AOC-2D may be related to this historic feature but have been removed by IRM #3.

Exceedances of TOGS groundwater standards for PCBs in the vicinity of AOC-2D were not reproducible after removal of PCB impacted soil borings as part of the IRM #3.

AOC-2D located in the FFC has been investigated in soil and groundwater as part of the RI for #c808022 as discussed above. Soil and groundwater data collected are sufficient to characterize the nature and extent of AOC-2D and to evaluate potential migration pathways in accordance with RI objectives. As discussed in Section 6, no further assessment is warranted to further define the nature and extent of impacts in soil and groundwater for AOC-2D on Site #c808022. Excavations as part of IRM #3 completed in the FFC to approximately 16 ft bgs (approximate depth to water table) did not identify a manhole associated with AOC-2D.

5.2.8 AOC-2E (Waste Pit Near Building 44)

AOC-2E is a waste pit near former Building 44 (**Figure 1-3**) and underlies the EHS Building (AOC-1) (**Figure 1-4**). AOC-2E spatially overlaps AOC-17-8 and AOC-10D-2. AOC-2E was evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected adjacent to AOC-2E, and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. The media of concern associated with AOC-2E as per the 2019 RI Work Plan (Geosyntec, 2019a) included soil; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through groundwater and sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-2E are PCBs, metals, SVOCs, and VOCs.

AOC-2E Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-2E underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-2E Groundwater

Potential impacts of AOC-2E on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of

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AOC-2E include MW-88S and MW-88I located within the New BCP Site. Groundwater samples collected as part of the RI investigation of AOC-2E were analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, VOCs, and SVOCs were not detected above TOGS groundwater standards at MW-88S and MW-88I downgradient of AOC-2E; therefore, further assessment is not warranted.

AOC-2E Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor sample SSHS-23-SS was collected in the vicinity of AOC-2E, within Room 156. VOCs were reported below NYSDOH Matrix Guidelines at SSHS-23-SS.

AOC-2E Summary

AOC-2E is a former waste pit near Building 44. This AOC is located underneath the EHS Building (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected adjacent to AOC-2E, and groundwater data collected downgradient of AOC-2E, outside of the EHS building footprint.

PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-2E. VOCs were reported below NYSDOH Matrix Guidelines in the vicinity of AOC-2E.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-2E located under the EHS Building is proposed to be managed under the Track 4 remedy.

5.2.9 AOC-3 (1979 Storm Sewer)

The existing stormwater sewer at EHS, identified as AOC-3 (1979 Storm Sewer), was evaluated through inline camera surveys, catch basin sampling, soil investigation, and groundwater investigation as part of the RI and the FFC PDI (**Figure 1-4**). This AOC is located in the FFC, Tennis Court and Main Parking Lot area, and Rear Parking Lot. Inline camera surveys and test pitting were used to identify the extent of the combined storm and sanitary sewer as discussed in Section 2.4. This AOC was investigated through collection of fine-grained material samples within

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catch basins and collection of soil and groundwater samples to evaluate potential releases of COPCs. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-3 are PCBs, metals, and SVOCs, and the media of concern associated with AOC-3 includes fine-grained materials, soil, and groundwater.

Samples of fine-grained material collected from active storm sewer catch basins at the FFC were sampled as part of the FFC RI/PDI in June 2019 (Geosyntec, 2020b). Active storm sewer catch basins in the Rear Parking Lot were sampled in May 2015 as part of a PDI for an IRM to address OS2 on the adjacent Former Sperry Remington Site (#808043) (Geosyntec, 2019k). The results from these analyses are presented on **Figure 5-17** and in **Table 5-14**.

AOC-3 Fine Grained Materials

Total PCBs were detected in fine-grained material above the NYSDEC Class C SGV of 1 mg/kg in the following samples:

- CB-20 (1.52 mg/kg) located in the FFC
- CB-31 (1.187 mg/kg) located in the FFC
- CB-07 (1.785 mg/kg) located in the Rear Parking Lot

Total PAHs were detected in fine-grained material above the NYSDEC Class C SGV of 35 mg/kg in the following samples:

- CB-06 (156.9 mg/kg) located in the Rear Parking Lot
- CB-38 (71.77 mg/kg) located in the FFC

Metals were detected in fine-grained material above NYSDEC Class C SGVs in the following compounds and samples:

- Lead – CB-20 (420 mg/kg) located in the FFC. Class C SGV of 130 mg/kg.
- Zinc – CB-37 (510 mg/kg) located in the FFC. Class C SGV of 460 mg/kg.
- Silver – CB-07 (600 mg/kg) located in the Rear Parking Lot. Class C SGV of 2.2 mg/kg.

No spatial trends in the distribution of COPC exceedances were observed, suggesting that those exceedances were localized.

Total PAH exceedances at CB-06 in the Rear Parking Lot are likely associated with runoff from the asphalt pavement. Potential sources could also include runoff from adjacent paved and vegetated areas in the FFC and Rear Parking Lot where PCB and metal impacts were identified. Soil cover systems were installed in the Rear Parking Lot as part of IRM #2 and in the FFC as part of IRM #5, which eliminates runoff from those sources. In addition, catch basins on the FFC including CB-12, CB-13, CB-20, CB-25, CB-26, CB-27, CB-29, CB-30, CB-31, CB-32, CB-33, CB-34, CB-35, CB-36, CB-37, and CB-38 were demolished as part of the EHS 2020 stadium

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renovations. Remaining catch basins on the FFC include CB-05, CB-11, and CB-09 north of the EHS building. Potential migration of COPCs to surface water from the current EHS storm sewer system has been mitigated by IRMs and storm sewer modifications by ECSD as part of capital improvements. The nature and extent of impacts to surrounding soils through potential stormwater sewer or catch basin releases was evaluated through soil investigations completed in the FFC and Rear Parking lot in the vicinity of the stormwater sewer and catch basins. Based on these soil investigations, no further activities are required to evaluate the nature and extent of impacts observed in the stormwater sewer or catch basins.

A 12-inch concrete line located at the north end of the FFC (Segment 1) was historically a combined storm and sanitary sewer line (**Figure 2-4** and **Figure 5-17**). Drawings provided by CCSD indicate that the sewer is connected to a storm sewer line beneath South Main Street, travels across the FFC, and then turns north on the NSRC property. Segment 1 connects to sewer lines maintained by CCSD and does not discharge to surface water. A push camera survey was completed at MH-1, a brick-lined manhole connected to the sewer within the FFC, in May 2019. The direction of flow was observed to be from west to east within the FFC during the push-camera survey in May 2019 (which occurred following a rain event). MH-2 and MH-3 are brick-lined manholes observed on the NSRC property (outside of the FFC boundary). Segment 1 was visually observed to tie into MH-2, where it then appeared to flow north toward MH-3 (combined with another pipe that entered MH-2 from the south). Fine-grained materials were sampled from MH-1 on Segment 1 in May 2019, and from MH-2 and MH-3 (located downstream of the FFC) in November and December 2019, respectively. The results from these samples are presented on **Figure 5-17** and in **Table 5-14**. Results are compared against NYSDEC Class C SGVs (NYSDEC, 2014), Unrestricted SCOs, Restricted Residential SCOs, PoG SCOs, 20 times TCLP threshold for metals (200 times TCLP threshold for lead), and 100 mg/kg total PAHs. While MH-2 and MH-3 are located outside of the Revised BCP Site Boundary, their data are included in this report for completeness.

Total PCBs were not detected in fine-grained material above the NYSDEC Class C SGV of 1 mg/kg in samples collected from MH-1 through MH-3.

Total PAHs were detected in fine-grained material above the NYSDEC Class C SGV of 35 mg/kg in the following samples:

- MH-1 (40.18 mg/kg) located in the FFC.

Metals were detected in fine-grained material above NYSDEC Class C SGVs in the following compounds and samples:

- MH-1 located in the FFC:
    - Lead (220 mg/kg). Class C SGV of 130 mg/kg.
- MH-2 located on NSRC:
    - Copper (160 mg/kg). Class C SGV of 150 mg/kg.

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  - Lead (210 mg/kg). Class C SGV of 130 mg/kg.

- MH-3 located on NSRC:
  - Cadmium (17 mg/kg). Class C SGV of 5 mg/kg.
  - Chromium (III+VI) (130J+ mg/kg). Class C SGV of 110 mg/kg.
  - Copper (250 mg/kg). Class C SGV of 150 mg/kg.
  - Lead (280 mg/kg). Class C SGV of 130 mg/kg.
  - Silver (6.1 mg/kg). Class C SGV of 2.2 mg/kg.
  - Zinc (690 mg/kg). Class C SGV of 460 mg/kg.

Segment 1 and MH-1 are currently in place and connect to sewer lines maintained by CCSD. Metals were detected in fine-grained material above NYSDEC Class C SGVs at MH-1. Segment 1 does not discharge to surface water; therefore, no further investigation is warranted at this time. MH-2 was removed during the FFC IRM. MH-3 remains in place off-Site on NSRC property. Metals were detected in fine-grained material above NYSDEC Class C SGVs at MH-3. Investigation findings and associated conclusions for MH-3 will be discussed in the #c808054 RI/AA.

AOC-3 Soil

Soil samples were collected adjacent to CB-05 (B2976) and CB-09 (B2977) and along Segment 1 (B2108, B2127, B2089, B2070, and B2050) (**Figure 2-4**). These samples were collected to evaluate a potential release from this AOC into surrounding soils. B2976 and B2977 were advanced at depths to evaluate a potential release from lower intervals associated with the catch basin features.

CB-05

- B2976 was advanced from 12-14 ft bgs. PCBs, SVOCs and VOCs were not detected above Restricted Residential SCOs.

CB-09

- B2977 was advanced from 10-14 ft bgs. PCBs were detected above the Restricted Residential SCO at B2977 from 10-12 ft bgs (13.33 mg/kg) and from 12-14 ft bgs (2.74 mg/kg). SVOCs and VOCs were not detected above the Restricted Residential SCOs.

CB-05 and CB-09 remain in place. Soil results above Restricted Residential SCOs adjacent to CB-09 indicate a potential release to surrounding soils. The invert elevations of CB-05 and CB-09 for the sewer line that runs between them are 843.05 ft msl and 844.0 ft msl, respectively, so the depth of the sewer line is between 11 and 12 ft bgs. COPCs were detected above the Restricted

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Residential SCO (1 mg/kg) adjacent to the sewer line in the following soil boring samples collected between 8 and 16 ft bgs (most were excavated during IRM #4 with excavation to the water table):

PCBs

- The following soil boring samples adjacent to AOC-3 had PCBs detected above TSCA level (>= 50 mg/kg):
    - SSHS-B443-SUB-8-10 (271.6 mg/kg) - Excavated
    - SSHS-B439-SUB-8-10 (144.8 mg/kg) - Excavated
    - SSHS-B652-SUB-8-10 (108.7 mg/kg) - Excavated
    - SSHS-B2679-SUB-8-10 (108.8 mg/kg) – Excavated
    - SSHS-B3566-SUB-8-10 (166.7 mg/kg) – Excavated
    - SSHS-B2679-SUB-10-12 (119.2 mg/kg) – Excavated
- The following soil boring samples adjacent to AOC-3 had PCBs detected above the PoG SCO (>3.2 mg/kg), but below TSCA level (>= 50 mg/kg):
    - SSHS-B653-SUB-8-10 (11.91 mg/kg) – Excavated
    - SSHS-B2637-SUB-8-10 (37.3 mg/kg) – Excavated
    - SSHS-B3567-SUB-8-10 (19.55 mg/kg) – Excavated
    - SSHS-B653-SUB-10-12 (7.4 mg/kg) – Excavated
    - SSHS-B2629-SUB-10-12 (13.66 mg/kg) – Excavated
    - SSHS-B2977-SUB-10-12 (13.33 mg/kg) – Remaining in place
    - SSHS-B3567-SUB-10-12 (3.54 mg/kg) – Excavated
    - SSHS-B652-SUB-12-14 (19.24 mg/kg) – Remaining in place
    - SSHS-B653-SUB-12-14 (5.41 mg/kg) – Remaining in place
    - SSHS-B2634-SUB-12-14 (12.06 mg/kg) – Excavated
    - SSHS-B2637-SUB-12-14 (12.56 mg/kg) – Excavated
    - SSHS-B3566-SUB-12-14 (6.06 mg/kg) – Remaining in place
    - SSHS-B2629-SUB-14-16 (4.05 mg/kg) – Remaining in place
    - SSHS-B2679-SUB-14-16 (28.69 mg/kg) – Remaining in place
    - SSHS-B3567-SUB-14-16 (3.39 mg/kg) – Remaining in place
- The following soil boring samples adjacent to AOC-3 had PCBs detected above the Restricted Residential SCO (>1 mg/kg), but below the PoG SCO (>3.2 mg/kg):
    - SSHS-B2629-SUB-8-10 (2.47 mg/kg) – Excavated
    - SSHS-B3566-SUB-10-12 (1.47 mg/kg) – Excavated

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- SSHS-B2977-SUB-12-14 (2.74 mg/kg) – Remaining in place
- SSHS-B3567-SUB-12-14 (1.36 mg/kg) – Remaining in place

Metals

- Lead – One sample (SSHS-B2745-SUB-10-12 duplicate PS-FD-7) adjacent to AOC-3 had lead detected above the Restricted Residential SCO (>400 mg/kg) and the PoG SCO (>450 mg/kg), from 10-12 ft bgs at 490 mg/kg. The lead detection in the parent sample was 280 mg/kg. One sample (B43-0.5-2.5) within AOC-3A-5 had lead detected above the PoG SCO (>450 mg/kg) from 0.5-2.5 ft bgs at 2,210 mg/kg. This sample was excavated during IRM #5A2.

PCBs were detected above the Restricted Residential SCO (1 mg/kg) at depths from 16-44 ft bfg, below the soil cover system (**Table 5-7A**). Due to the technical impracticability of excavating soils at and below the water table, total PCBs remain in place in portions of IRM #4A. The maximum concentration of PCBs above the Restricted Residential SCO below the water table is 19,240 mg/kg from 24.2-26.2 ft bfg at SSHS-B3564A-SUB-24-26. PCBs are horizontally defined for the FFC area below the water table by the Restricted Residential SCO depicted on **Figures 5-9A-P**. The silty clay aquitard layer was encountered at B645A at 34 ft bgs. TSCA level PCB concentrations are primarily located in the vicinity of the former slide rail area and are defined within Site #c808022. These TSCA level PCB concentrations are generally collocated with known PCB groundwater impacts located in the vicinity of the former slide rail area. Cross sections illustrating the former slide rail area, sub grade excavation contours, PCBs in soils left in place, and monitoring wells are included in **Appendix P**.

Segment 1

- B2108 was advanced from 0-14 ft bgs. Mercury was detected above the Restricted Residential SCO from 0.17-2 ft bgs at 0.84 mg/kg. This sample was excavated as part of the FFC IRM. Mercury was not detected above the Restricted Residential SCO at other depths. PCBs, SVOCs and VOCs were not detected above the Restricted Residential SCOs.

- B2127 was advanced from 0-14 ft bgs. PCBs were detected above the Restricted Residential SCO from 2-4 ft bgs at 1.04 mg/kg. This sample remains in place. PCBs were not detected above the Restricted Residential SCO at other depths. Metals, SVOCs and VOCs were not detected above the Restricted Residential SCOs.

- B2089 was advanced from 0-14 ft bgs. Mercury was detected above the Restricted Residential SCO from 0.17-2 ft bgs at 0.96 mg/kg. This sample was excavated as part of the FFC IRM. Mercury was not detected above the Restricted Residential SCO at other depths. PCBs, SVOCs and VOCs were not detected above the Restricted Residential SCOs.

- B2070 was advanced from 0-14 ft bgs. PCBs, metals, SVOCs and VOCs were not detected above Restricted Residential SCOs.

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- B2050 was advanced from 0-14 ft bgs. Arsenic was detected above the Restricted Residential SCO from 6-8 ft bgs at 17 mg/kg. This sample remains in place. Arsenic was not detected above the Restricted Residential SCO at other depths. PCBs, SVOCs and VOCs were not detected above the Restricted Residential SCOs.

Restricted Residential SCO exceedances detected in soil borings installed to the south of Segment 1 were shallow in nature and do not indicate a potential release to surrounding soils.

AOC-3 Groundwater

Potential impacts of AOC-3 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of this AOC. Monitoring wells downgradient of the eastern portion of AOC-3 include MW-11S, MW-11I, MW-44, MW-38, MW-102S, MW-102I, and MW-33. Monitoring wells downgradient of AOC-3 north of the EHS building include MW-39, MW-103S, and MW-103I. Monitoring wells were analyzed for PCBs, metals, SVOCs, and VOCs. Temporary monitoring wells B3557, B3558, B3559, B3560, B3561, B3562, B3563, B3563I, B3564, B3565, B3566, and B3571 were installed downgradient of AOC-3 north of the EHS building. These temporary monitoring wells were analyzed for PCBs, metals, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards.

MW-103S and MW-103I are located in the former slide rail area. A cross section illustrating the location of the former slide rail area and monitoring wells is included in **Appendix P**. MW-103S and MW-103I were sampled for PCBs, metals, SVOCs, and VOCs in September 2023 and April 2024. For each event, results for total PCBs were detected above TOGS groundwater standards. MW-103I had concentrations of 6 µg/L and 7.99 µg/L, and MW-103S had concentrations of 2 µg/L and 1.6 µg/L, respectively. Metals, SVOCS, and VOCs were not detected above TOGS groundwater standards. PCBs were detected above TOGS groundwater standards in nine of the temporary wells, ranging from 0.097 µg/L (B3571) to 32.85 µg/L (B3563I). PCBs were detected below TOGS groundwater standards at B3559 and were non-detect at B3557 and B3560. Metals, SVOCs and VOCs were not detected above TOGS groundwater standards. PCB concentrations in the former slide rail area have generally been observed to be consistent as further discussed in Section 6.2.1.

MW-102S and MW-102I were sampled for PCBs, metals, SVOCs, and VOCs in September 2023 and April 2024. MW-102I had no exceedances of TOGS groundwater standards. In April 2024, SVOCs were detected above TOGS groundwater standards in MW-102S for benz(a)anthracene (0.093 J µg/L), benzo(b)fluoranthene (0.11 J µg/L), benzo(k)fluoranthene (0.11 J µg/L), chrysene (0.11 J µg/L), and indeno(1,2,3-cd)pyrene (0.10 J µg/L). PCBs, metals, and VOCs were not detected above TOGS groundwater standards.

Groundwater results downgradient of AOC-3 to the north of the EHS Building indicate a potential release attributable to this AOC.

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AOC-3 Summary

AOC-3 is the existing stormwater sewer at EHS (**Figure 1-4**). This AOC was evaluated through inline camera surveys, catch basin sampling, soil investigation, and groundwater investigation. Inline camera surveys and test pitting were used to identify the extent of the combined storm and sanitary sewer. Catch basins were sampled where fine-grained material was present. Adjacent soil investigations and downgradient monitoring wells were used to assess potential subsurface releases from this feature.

PCBs, total PAHs, and metals, including lead, zinc, and silver were detected in fine-grained material above NYSDEC Class C SGVs. No spatial trends in the distribution of COPC exceedances were observed, suggesting that those exceedances were localized.

Soil borings were advanced adjacent to CB-05 and CB-09 and along Segment 1 to evaluate potential release from this AOC. PCBs were detected above the Restricted Residential SCO adjacent to CB-09 and adjacent to and below the sewer line between CB-09 and CB-05, indicating a potential release at this location to surrounding soils. PCBs were detected above the Restricted Residential SCO and the Protection of Groundwater SCO below the water table in the slide rail area. COPCs were not detected above Restricted Residential SCOs adjacent to CB-05. Along Segment 1, COPCs detected above Restricted Residential SCOs were shallow in nature and not indicative of a release from this feature.

PCBs were detected above TOGS groundwater standards downgradient of AOC-3 to the north of the EHS building in the former slide rail area. AOC-3 is a potential source area for the impacts observed. The lateral extent of these PCBs impacts is defined downgradient. SVOCs detected above TOGS groundwater standards downgradient of the eastern portion of AOC-3 are attributed to AOC-11. Groundwater impacts at the former slide rail area are discussed further in Section 6.2. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

5.2.10 AOC-3A (1979 Drywell Field)

AOC-3A is the 1979 Drywell Field and includes eight discrete areas located in separate areas of the Site, including seven discrete areas in the NAF (AOC-3A-1, AOC-3A-3, AOC-3A-4, AOC-3A-5, AOC-3A-6, AOC-3A-7, AOC-3A-8) and one area near the Tennis Courts (AOC-3A-2) (**Figure 1-4**). AOC-3A-1 spatially overlaps AOC-2, AOC-2C, AOC-16-3 and AOC-20. AOC-3A-5 spatially overlaps AOC-10A-5. AOC-3A-2 is located outside of the Revised BCP Site. Investigation findings and associated conclusions for AOC-3A-2 will be discussed in the #c808054 RI/AA. The location and construction of these drywells are known based on historical Site drawings. While no specific potential release has been identified, historical operation of these structures have the potential to have resulted in release of COPCs to underlying soil. Historical records indicate these structures were designed to collect surface stormwater runoff after industrial operation of the Site. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-3A includes soil; however, since material within the drywells could have migrated from the drywell into groundwater via stormwater, groundwater was also evaluated. As

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per the 2019 RI Work Plan, COPCs associated with AOC-3A are PCBs, metals, SVOCs, and VOCs.

Soil potentially associated with AOC-3A has been sufficiently investigated to achieve the RI objectives. COPCs including PCBs, metals, and SVOCs were identified within AOC-3A above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-3A have been delineated vertically. For each AOC-3A area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

Drywells Encountered

Drywells were encountered during IRM #5A2 including DW-1, DW-2, DW-3, DW-20, DW-21, DW-N, one unnamed drywell in the NAF, and one unnamed drywell west of the Tennis Courts. As these drywells were encountered during IRM activities, the surrounding soil and groundwater were evaluated, as well as fine-grained material encountered inside the drywells, before wells were abandoned in place or removed.

DW-1, DW-2, and DW-3 (AOC-3A-5 and AOC-3A-6) were identified northwest of the softball field during IRM #5A2 excavations, and removed between 8 November 2021 and 10 November 2021. Confirmation samples were taken, and there were no exceedances of screening criteria at DW-1 or DW-2. A DW-3 sidewall confirmation sample had a Restricted Residential SCO exceedance (1300 mg/kg) of copper at 4-6 ft bgs (IRM5A2-DW3-S1) and a PoG SCO exceedance (500 mg/kg; 270 mg/kg) of chromium (III+VI) and nickel at 8-10 ft bgs (IRM5A2-DW3-S4). These exceedances remain in place and are laterally delineated by B3254, B418-S2, S448, AreaC-B3-S1, B3069, B3921, DW-16, B2056, and B3055. IRM5A2-DW3-S1 and IRM5A2-DW3-4 are vertically delineated by DW3-BOT1, B3069, and B3921.

Drywell DW-20 (AOC-3A-4) was encountered during excavations on 20 April 2022 at 2 ft bgs. A soil sample was collected from the interior of DW-20 (IRM5A2-A5-DW1). An 8-in diameter steel pipe connection to the south was observed. On 3 May 2022, DW-21 (AOC-3A-4) was observed approximately 90-inches south of the pipe opening at 2.5 ft bgs. Removal of DW-21 was not feasible due to its proximity to the EHS maintenance shed, therefore a Drywell Closure Plan (Geosyntec 2024g) was submitted and approved as modified. The drywells were abandoned in place using flowable fill.

Between 8 February 2022 and 9 February 2022, an unnamed historical drywell located beneath the softball fields was encountered and removed to facilitate excavations to 16 ft bgs (AOC-3A-7). During excavation along the northern Site boundary under IRM #5A2 Addendum #8 Phase 7, DW-N (AOC-3A-8) was observed at the northern entrance to the VFW property at approximately 1.5 ft bgs. DW-N was filled with flowable fill and abandoned in place. Historical plans indicate two additional drywells on the northern property line, but no other drywells were identified by IRM activities. It is presumed that these two wells no longer exist and/or were removed when the

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gas line was installed. Significant excavations were conducted up to 12 ft bgs along the eastern property line (AOC-3A-1) where historical plans indicated drywells, but no drywells were encountered. It is presumed that they may have been removed during the gas line installation. Historical plans indicate one drywell located west of the Tennis Courts, however, its footprint is outside of the Revised BCP Site. This drywell was not encountered during RI investigations.

AOC-3A NAF Soil

A total of 84 soil borings were installed within the portions of AOC-3A located within the NAF to a maximum depth of 43 ft bgs across multiple soil sampling events (Section 2.2). Within the NAF, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. COPCs including PCBs, metals, and SVOCs were identified within AOC-3A above Restricted Residential SCOs. VOCs were not identified within AOC-3A above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were detected up to a depth of 25 ft bgs, metals above the Restricted Residential SCO, including arsenic, barium, chromium, copper, lead, and nickel, were detected up to a depth of 40 ft bgs, and SVOCs above the Restricted Residential SCO, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected up to a depth of 4 ft bgs.

A summary of soil boring exceedances found within AOC-3A as part of the RI is provided below. Excavations within AOC-3A were completed up to 13 ft bgs as part of IRM #5A2. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples are presented below by soil boring samples that have been excavated and soil boring samples that remain in place.

PCBs

- The following soil boring samples within AOC-3A had PCBs detected above TSCA level (>= 50 mg/kg):
    - AOC-3A-5: SSHS-B3619-SUB-2-4 (108 mg/kg) – Excavated
    - AOC-3A-7: SSHS-B3884-SUB-14-16 (121 mg/kg) – Remaining in place
- The following soil boring samples within AOC-3A had PCBs detected above the PoG SCO (>3.2 mg/kg), but below TSCA level (>= 50 mg/kg):
    - AOC-3A-4: SSHS-B3095-SUB-0.17-2 (6.7 mg/kg) – Excavated
    - AOC-3A-6: SSHS-B3618-SUB-0.17-2 (15.9 mg/kg) – Excavated
    - AOC-3A-7: SSHS-B3884-SUB-16-18 (32.1 mg/kg) – Remaining in place
    - AOC-3A-7: SSHS-B3884A-SUB-12-14 (3.533 mg/kg) – Excavated
- The following soil boring samples within AOC-3A had PCBs detected above the Restricted Residential SCO (>1 mg/kg), but below the PoG SCO (>3.2 mg/kg):
    - AOC-3A-6: SSHS-B3242-SUB-0.17-2 (1.46 mg/kg) – Excavated

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- AOC-3A-7: SSHS-B3884-SUB-18-20 (1.48 mg/kg) – Remaining in place
- AOC-3A-7: SSHS-B3884-SUB-22-24 (2.27 mg/kg) – Remaining in place
- AOC-3A-7: SSHS-B3884-SUB-24-25 (1.52 mg/kg) – Remaining in place

Metals

- Arsenic – Two samples (SSHS-B3646A-SUB-38-40 in AOC-3A-3 and SSHS-B3631-SUB-2-4 in AOC-3A-5) had arsenic detected above the Restricted Residential SCO (>16 mg/kg) and PoG SCO (>16 mg/kg) from 2-4 and 38-40 ft bgs with concentrations ranging from 17 to 18 mg/kg, respectively. SSHS-B3631-SUB-2-4 was excavated during IRM #5A2. SSHS-B3646A-SUB-38-40 remains in place below the water table at 17 mg/kg.
- Barium – One sample (SSHS-B3005-SUB-10-12) within AOC-3A-1 had barium detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (> 820 mg/kg), from 10-12 ft bgs at 430 mg/kg. One sample (SSHS-B3005-SUB-8-10) within AOC-3A-1 had barium detected above the PoG SCO (> 820 mg/kg) from 8-10 ft bgs at 1,200 mg/kg These SCO exceedances remain in place.
- Chromium – No samples within AOC-3A had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg). A total of 23 samples within AOC-3A-1, AOC-3A-3, and AOC-3A-5 had chromium detected above the PoG SCO (>19 mg/kg) from 0-25 and 38-40 ft bgs; however, four of the sample locations were analyzed for hexavalent chromium and were non-detect. The maximum concentration of chromium (III+VI) was 110 mg/kg at SSHS-B3631-SUB-2-4 in AOC-3A-5, but hexavalent chromium was non-detect. Seven of the 23 samples were excavated during IRM #5A2. Samples with chromium detected above the PoG SCO (>19 mg/kg) remain in place from 0-25 and 38-40 ft bgs. Concentrations for samples remaining in place range from 20 to 51 mg/kg
- Copper – Two samples (SSHS-B3502-SUB-0.17-2 and SSHS-B3631-SUB-2-4) within AOC-3A-5 had copper detected above the Restricted Residential SCO (>270 mg/kg), but not the PoG SCO (>1,720 mg/kg), from 0.17-4 ft bgs. Concentrations ranged from 370 to 460 mg/kg, respectively. No samples within AOC-3A had copper detected above the PoG SCO (>1,720 mg/kg). These two samples were excavated during IRM #5A2.
- Lead – One sample (SSHS-B3631-SUB-2-4) within AOC-3A-5 had lead detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (>450 mg/kg), from 2-4 ft bgs at 440 mg/kg. One sample (B43-0.5-2.5) within AOC-3A-5 had lead detected above the PoG SCO (>450 mg/kg) from 0.5-2.5 ft bgs at 2,210 mg/kg. These two samples were excavated during IRM #5A2.
- Mercury – No samples within AOC-3A had mercury detected above the Restricted Residential SCO (>0.81 mg/kg). One sample (SSHS-B3004-SUB-6-8) within AOC-3A had mercury detected above the PoG SCO (>0.73 mg/kg), but not the Restricted Residential SCO (>0.81 mg/kg), from 6-8 ft bgs at 0.81 mg/kg. This SCO exceedance remains in place.
- Nickel – One sample (SSHS-B3631-SUB-2-4) within AOC-3A-5 had nickel detected above the Restricted Residential SCO (>310 mg/kg) from 2-4 ft bgs at 380 mg/kg. One

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sample (SSHS-B3008-SUB-2-4) within AOC-3A-1 had nickel detected above the PoG SCO (>130 mg/kg), but not the Restricted Residential SCO (>310 mg/kg), from 2-4 ft bgs at 140 mg/kg. SSHS-B3631-SUB-2-4 was excavated during IRM #5A2. SSHS-B3008-SUB-2-4 remains in place.

SVOCs

- Benz(a)anthracene – Two samples (SSHS-B3331-SUB-2-4 in AOC-3A-1 and SSHS-B3620-SUB-0.17-2 in AOC-3A-5) had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0.17-4 ft bgs. Concentrations ranged from 2 to 7.8 mg/kg, respectively. SSHS-B3620-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3331-SUB-2-4 remains in place at 2 mg/kg.
- Benzo(a)pyrene – Two samples (SSHS-B3331-SUB-2-4 in AOC-3A-1 and SSHS-B3620-SUB-0.17-2 in AOC-3A-5) had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>22 mg/kg), from 0.17-4 ft bgs. Concentrations ranged from 1.7 to 6.5 mg/kg, respectively. No samples within AOC-3A had benzo(a)pyrene detected above PoG SCO (>22 mg/kg). SSHS-B3620-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3331-SUB-2-4 remains in place at 1.7 mg/kg.
- Benzo(b)fluoranthene – Two samples (SSHS-B4018-SUB-2-4 [DUP-1] and SSHS-B4017-SUB-2-4) within AOC-3A-4 had benzo(b)fluoranthene detected above Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>1.7 mg/kg), from 2-4 ft bgs at concentrations ranging from 1.1 to 1.4 mg/kg, respectively. Two samples (SSHS-B3331-SUB-2-4 in AOC-3A-1 and SSHS-B3620-SUB-0.17-2 in AOC-3A-5) had benzo(b)fluoranthene detected above PoG SCO (>1.7 mg/kg) from 0.17-4 ft bgs ranging from 2.5 to 8.2 mg/kg, respectively. SSHS-B3620-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3331-SUB-2-4 remains in place at 2.5 mg/kg. SSHS-B4018-SUB-2-4 [DUP-1] remains in place 1.1 mg/kg. SSHS-B4017-SUB-2-4 remains in place at 1.4 mg/kg.
- Benzo(k)fluoranthene – No samples within AOC-3A had benzo(k)fluoranthene detected above the Restricted Residential SCO (>3.9 mg/kg). One sample (SSHS-B3620-SUB-0.17-2) within AOC-3A-5 had benzo(k)fluoranthene detected above the PoG SCO (>1.7 mg/kg), but not the Restricted Residential SCO (>3.9 mg/kg), from 0.17-2 ft bgs at 2.6 mg/kg. The sample was excavated during IRM #5A2.
- Chrysene – One sample (SSHS-B3620-SUB-0.17-2) within AOC-3A-5 had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg) from 0.17-2 ft bgs at 8.2 mg/kg. One sample (SSHS-B3331-SUB-2-4) within AOC-3A-1 had chrysene detected above the PoG SCO (>1 mg/kg), but not the Restricted Residential SCO (>3.9 mg/kg), from 2-4 ft bgs at 1.9 mg/kg. SSHS-B3620-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3331-SUB-2-4 remains in place at 1.9 mg/kg.
- Dibenz(a,h)anthracene – Two samples (SSHS-B3331-SUB-2-4 in AOC-3A-1 and SSHS-B3620-SUB-0.17-2 in AOC-3A-5) had dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg), but not the PoG SCO (>1,000 mg/kg), from

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0.17-4 ft bgs. Concentrations ranged from 0.51 to 1.1 mg/kg, respectively. No samples within AOC-3A had dibenz(a,h)anthracene detected above the PoG SCO (>1,000 mg/kg). SSHS-B3620-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3331-SUB-2-4 remains in place at 0.51 mg/kg.

- Indeno(1,2,3-cd)pyrene – A total of seven samples within AOC-3A-1, AOC-3A-4, AOC-3A-5, and AOC-3A-8 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg), but not the PoG SCO (>8.2 mg/kg), from 0.17-4 ft bgs. No samples within AOC-3A had indeno(1,2,3-cd)pyrene detected above the PoG SCO (>8.2 mg/kg). The maximum concentration of indeno(1,2,3-cd)pyrene was 3.5 mg/kg at SSHS-B3620-SUB-0.17-2. Three of the seven samples were excavated during IRM #5A2. SSHS-B3226-SUB-2-4 remains in place at 0.58 mg/kg. SSHS-B3331-SUB-2-4 remains in place at 1.1 mg/kg. SSHS-B4017-SUB-2-4 remains in place at 0.83 mg/kg. SSHS-B4018-SUB-2-4 (DUP-1) remains in place at 0.58 mg/kg.

Restricted Residential SCO exceedances remaining in place within AOC-3A are horizontally delineated or inferred to the Revised BCP Site boundary. COPCs above Restricted Residential SCOs present within AOC-3A have been delineated vertically. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

<u>AOC-3A Groundwater</u>

Potential impacts of AOC-3A on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed within or downgradient of AOC-3A include the following

- AOC-3A-1
  - Within AOC-3A-1: MW-51, MW-106, MW-57R, MW-100S, MW-100I, B3882, B3916S, B3916I
  - Downgradient of AOC-3A-1: MW-96, MW-97
- AOC-3A-3
  - Within AOC-3A-3: MW-66S, MW-66I
  - Downgradient of AOC-3A-3: MW-64S, MW-64I
- AOC-3A-4
  - Within AOC-3A-4: MW-63S, MW-63I
  - Downgradient of AOC-3A-4: MW-56
- AOC-3A-5
  - Within AOC-3A-5: MW-54
  - Downgradient of AOC-3A-5: MW-50S, MW-50I
- AOC-3A-6
  - Downgradient of AOC-3A-6: MW-49
- AOC-3A-7
  - Within AOC-3A-7: MW-50S, MW-50I
  - Downgradient of AOC-3A-7: MW-50R and MW-51
- AOC-3A-8

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- Within AOC-3A-8: MW-48 and MW-53

Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Temporary monitoring wells B3882 (analyzed for PCBs, metals, SVOCs, and VOCs), B3916S (analyzed for PCBs), and B3916I (analyzed for PCBs) are located within AOC-3A-1. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, SVOCs, and VOCs were detected above TOGS groundwater standards within or downgradient of AOC-3A.

PCBs

PCBs were reported above TOGS groundwater standards within AOC-3A-4 at MW-63I (0.53 µg/L) on 18 February 2021. This sample was collected shortly after monitoring well installation on 29 January 2021. Elevated turbidity readings above 10 nephelometric turbidity units were observed during the February 2021 sampling event at MW-63I. Subsequent PCBs results at MW-63I were non-detect in April 2021 and September 2023. Because subsequent sampling of this monitoring well have been non-detect and initial exceedances were not repeated, initial exceedances are indicative of a short-term bias caused by disturbance of the subsurface associated with monitoring well construction. Monitoring well construction can increase turbidity and artificially elevate COPC concentrations through the desorption of constituents from soil particles and result in samples that are not representative of the aquifer. Subsequent sampling of MW-63I has demonstrated that PCBs are below TOGS in the area monitored by these wells. PCB exceedances are attributed to short-term disturbance of subsurface conditions associated with well installation; therefore, further assessment is not warranted.

PCB exceedances detected at MW-51, MW-96 and MW-106 observed within and downgradient of AOC-3A-1 and at MW-50S and MW-50I located within AOC-3A-7 are associated with AOC-19 and discussed further in Section 5.2.29.

SVOCs

SVOCs, including benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene, were detected above TOGS groundwater standards within AOC-3A-1 at MW-106 and MW-57R and AOC-3A-5 at MW-54. SVOC detections at these monitoring wells have been sporadic and nonrepeatable.

- SVOCs were detected above TOGS groundwater standards at MW-54 in April 2021. SVOCs were not previously detected above TOGS groundwater standards at MW-54 in February 2021.

- SVOCs were detected above TOGS groundwater standards at MW-57R in May 2023. SVOCs were not detected above TOGS groundwater standards at MW-57R for subsequent sampling events in September 2023, November 2023, January 2024, and April 2024.

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- SVOCs were detected above TOGS groundwater standards at MW-106 in May 2023 and April 2024. SVOCs were not detected above TOGS groundwater standards at MW-106 in September 2023, November 2023, and January 2024.

SVOC detections were sporadic and not reproduced during subsequent sampling events; therefore, further assessment is not warranted.

VOC

VOC exceedances observed at MW-50S, MW-50I, MW-51 and MW-96 within and downgradient of AOC-3A-7 and AOC-3A-1 are associated with AOC-19 and discussed further in Section 5.2.29.

AOC-3A Summary

AOC-3A is the 1979 Drywell Fields and includes eight discrete areas located in separate areas of the Site, including seven discrete areas in the NAF (AOC-3A-1, AOC-3A-3, AOC-3A-4, AOC-3A-5, AOC-3A-6, AOC-3A-7, AOC-3A-8) and one area near the Tennis Courts (AOC-3A-2) (**Figure 1-4**). AOC-3A-2 is located outside of the Revised BCP Site. Investigation findings and associated conclusions for AOC-3A-2 will be discussed in the #c808054 RI/AA. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-3A and to evaluate potential migration pathways in accordance with RI objectives. Analytical results indicate that PCBs, SVOCs, and metals were detected in soil above applicable SCOs up to depths of 40 ft bgs. VOCs were not identified above Restricted Residential SCOs within AOC-3A. Soils exceeding applicable SCOs are not confined to AOC-3A and extend beyond the limits of the AOC. COPCs identified in soil in AOC-3A may be related to the historic structure but have been removed or addressed by IRM #5A2 except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

The drywell structures encountered were addressed during IRM activities, in which they were either removed, abandoned, or evaluated and found suitable to remain in place. Where drywells were encountered, surrounding soil, groundwater, and interior fine-grained material were assessed to support characterization and closure decisions.

Exceedances of TOGS groundwater standards within or downgradient of AOC-3A are attributed to short-term disturbance of subsurface conditions associated with monitoring well installation (PCBs), were sporadic and not reproducible (SVOCs) or attributable to other AOCs (PCBs and VOCs from source area identified associated with AOC-19). Accordingly, these exceedances are not considered to be primarily attributable to impacts at AOC-3A and indicate that soil to groundwater migration is limited.

Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-3A, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further

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assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-3A on the Revised BCP Site.

5.2.11 AOC-4 (Earthen Waste Pits near EHS Gym and Pool)

AOC-4 is an earthen waste pit and is located below the EHS Building (AOC-1) and extends into the New BCP Site to the east (**Figure 1-4**). AOC-4 spatially overlaps AOC-11, AOC-10D-2 , and AOC-17-7. Historical records indicate the waste pit structure was earthen and open to direct release of COPCs to underlying soils. The location and depth of the former waste pits are known from historical documentation. The former elevations of the waste pit structures were from approximately 852 to 857 ft amsl. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-4 are soil, groundwater, and soil vapor, and COPCs associated with the AOC are PCBs, metals, SVOCs, and VOCs. Investigation findings and associated conclusions for AOC-4 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA. AOC-4 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**.

AOC-4 Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-4 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-4 Groundwater

Potential impacts of AOC-4 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells MW-12, MW-87I, MW-88S, MW-88I and temporary monitoring wells SB1 (analyzed for VOCs), B26-A (analyzed for SVOCs, and VOCs), and B29-A (analyzed for PCBs, SVOCs, and VOCs) are located downgradient of AOC-4. Results are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and

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VOCs, respectively, and are compared to TOGS groundwater standards. PCBs and metals were not detected above TOGS groundwater standards downgradient of AOC-4.

SVOCs

SVOCs, including benz(a)anthracene and chrysene, were detected above TOGS groundwater standards downgradient of AOC-4 at MW-12 and B26-A. SVOCs were detected above TOGS groundwater standards at MW-12 in May 2000 at 1.2J µg/L for benz(a)anthracene and 2.8J µg/L for chrysene. SVOCs were not detected above TOGS groundwater standards at MW-12 for subsequent sampling events in February 2021 and July 2021. SVOC detections were sporadic and not reproduced during subsequent sampling events; therefore, further assessment is not warranted.

VOCs

MW-12 was sampled for VOCs 17 times between 1997 and 2021. During these sample events, cis-1,2-DCE (9 µg/L), Freon 113 (6.1-160 µg/L), and TCE (6.8-9 µg/L) were detected above TOGS groundwater standards. Results in February and July 2021 did not report VOCs above TOGS groundwater standards; therefore, further assessment is not warranted.

AOC-4 Sub-Slab Soil Vapor

In sub-slab vapor in the vicinity of AOC-4, 1,1,1-TCA and TCE were detected below the east side of the Gymnasium in 2009 (SV-GM EAST) at concentrations of 23,000 µg/m3 (**Figure 5V-2B**) and 28 µg/m3 (**Figure 5V-2A**), respectively. Per the recommendation of NYSDOH (NYSDOH, 2010), ECSD installed a SSD System in the Gymnasium in 2010 as discussed in Section 3.1.2. Sub-slab vapor below the Gymnasium was not sampled by Unisys in 2014 and 2018 due to the presence of the vapor mitigation system. Sampling of the Gymnasium SSD effluent by Unisys detected 19 µg/m^3 of TCE in June 2018 (**Table 6-1B**), 3.4 µg/m^3 of TCE in November 2023, and 98.9 µg/m^3 of TCE in November 2025 (**Table 6-1C**). 1,1,1-TCA was not detected above the laboratory reporting limit. This suggests that TCE may be present in sub-slab vapor below the Gymnasium, but the continued presence of 1,1,1-TCA is unknown.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-4 Summary

AOC-4 is an earthen waste pit. This AOC is located underneath the EHS Building and extends east into the New BCP Site (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-4, outside of the EHS building footprint.

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PCBs and metals were not detected in groundwater above TOGS standards downgradient of AOC-4. Although SVOCs and VOCs were detected in groundwater above TOGS standards downgradient of AOC-4, these exceedances were not reproducible (SVOCs) or have been observed to decrease to concentrations below TOGS groundwater standards (VOCs at MW-12).

1,1,1-TCA were detected above NYSDOH Matrix Guidelines for sub-slab vapor at sample locations collected in the vicinity of AOC-4. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS Building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls (ECs), including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-4 located under the EHS is proposed to be managed under the Track 4 remedy. Portions of AOC-4 that extend to the east beyond the Revised BCP Site limits will be discussed in the #c808054 RI/AA.

5.2.12 AOC-5 (Sludge Tanks/Beds/Brick Pits near Building 64)

AOC-5 is sludge tanks/beds/brick pits near former Building 64 (**Figure 1-3**) and includes four discrete sections (AOC-5-1, AOC-5-2, AOC-5-3, AOC-5-4) located underneath the EHS Building (AOC-1) (**Figure 1-4**). AOC-5 spatially overlaps AOC-10D-6 and AOC-17-5. Historical records identify industrial process and waste structures assumed to be open to underlying soils. Historical operations near these structures have the potential to have resulted in release of COPCs to underlying soil.

AOC-5 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. The media of concern associated with AOC-5 as per the 2019 RI Work Plan included soil; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through groundwater and sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with the AOC are PCBs, metals, SVOCs, and VOCs. Portions of AOC-5-1 and AOC-5-4 extend outside the EHS building footprint and outside of the Revised BCP Site. Investigation findings and associated conclusions for the portions of AOC-5-1 and AOC-5-4 that extend beyond the Revised BCP Site limits will be discussed in the #c808054 RI/AA.

<u>AOC-5 Soil</u>

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe.

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The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-5 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-5 Groundwater

Potential impacts of AOC-5 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of AOC-5 include MW-71S, MW-71I, MW-90S, MW-90I, MW-91S, and MW-91I. Groundwater samples collected as part of the RI investigation of AOC-5 were analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, VOCs, and SVOCs were not observed above TOGS groundwater standards at MW-71S, MW-71I, MW-90S, MW-90I, MW-91S, and MW-91I downgradient of AOC-5.

AOC-5 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor samples were collected within AOC-5-4 (SSHS-10-SS), AOC-5-2 (SSHS-09-SS), in the vicinity of AOC-5-3 (SSHS-08-SS and SSHS-03-SS), and in the vicinity of AOC-5-1 (SS-133). Sub-slab vapor analytical results are presented in **Table 5-2** and screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. VOCs were detected below NYSDOH Matrix Guidelines for these sample locations with the exception of SSHS-03-SS. Sub-slab samples collected near AOC-5 in Room 127 (SSHS-03-SS) had TCE (39,000 µg/m^3) and cis-1,2-DCE (2,000 µg/m^3) observed above NYSDOH Matrix guidelines for sub-slab vapor. Based on the detections of TCE and cis-1,2-DCE, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. TCE and cis-1,2-DCE were detected in the F-Wing SSD effluent in June 2018 (340 µg/m^3 and 67 µg/m^3, respectively), December 2020 (43 µg/m^3 and 270 µg/m^3), April 2021 (39 µg/m^3 and 220 µg/m^3), December 2021 (50 µg/m^3 and 360 µg/m^3), November 2023 (339 µg/m^3 and 66.6 µg/m^3), November 2024 (40.8 µg/m^3 and 246 µg/m^3), and November 2025 (42 µg/m^3 and 303 µg/m^3) as presented on **Figure 6V-1B** and in **Table 6-1C**. TCE was detected in effluent in July 2021 at 26 µg/m^3, but cis-1,2-DCE was not detected. TCE and cis-1,2-DCE effluent concentrations decreased between June 2018 and July 2021 and increased in December 2021. TCE slightly decreased in November 2023 whereas cis-1,2-DCE slightly increased. In November 2024, TCE and cis-1,2-

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DCE decreased but then slightly increased in November 2025. This indicates that TCE and cis-1,2-DCE are still present in sub-slab vapor below F-Wing and may potentially be associated with AOC-5.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-5 Summary

AOC-5 is sludge tanks/beds/brick pits near Building 64 and consists of four AOCs located underneath the EHS building (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-5 outside of the EHS building footprint.

PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient AOC-5. VOCs in sub-slab vapor were detected above NYSDOH Matrix Guidelines for TCE and cis-1,2-DCE in the vicinity of AOC-5-3.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-5 located under the EHS Building is proposed to be managed under the Track 4 remedy. Investigation findings and associated conclusions for the portions of AOC-5 that extend beyond the Revised BCP Site limits will be discussed in the #c808054 RI/AA.

5.2.13 AOC-6 (Concrete Vaults)

AOC-6 is former concrete vaults located in the NAF, FFC, and underneath the EHS Building (**Figure 1-4**). AOC-6 consists of eight discrete sections located in separate areas of the Site, including the NAF (AOC-6-1), FFC (AOC-6-2, AOC-6-7, AOC-6-8, AOC-6-9, AOC-6-10) and the EHS Building (AOC-6-3). AOC-6-3 is located under the EHS Building (AOC-1). AOC-6-1 spatially overlaps with AOC-16-3. AOC-6-2 spatially overlaps with AOC-3 and AOC-10D-4. AOC-6-3 spatially overlaps with AOC-15-2 and AOC-10D-4. AOC-6-4 is located outside of the Revised BCP Site. Investigation findings and associated conclusions for AOC-6-4 will be discussed in the #c808054 RI/AA. AOC-6-5 and AOC-6-6 are located to the south of the Revised BCP Site on Site #p808049. AOC-6-5 and AOC-6-6 will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049). Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-6 includes soil and groundwater, and

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COPCs associated with the AOC-6 are PCBs, metals, SVOCs, and VOCs. Historical vaults associated with AOC-6 were not identified during IRM excavations.

Soil and groundwater potentially associated with the AOC-6 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-6 have been delineated vertically. For each AOC-6 area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

5.2.13.1 AOC-6 – NAF (AOC-6-1)

AOC-6-1 is located in the NAF (**Figure 1-4**). Potential impacts to AOC-6-1 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-6-1 are shown compared to Restricted Residential SCO values on Figures **5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Media of concern associated with AOC-6-1 includes soil and groundwater. COPCs associated with AOC-6-1 include PCBs, metals, SVOCs, and VOCs. Excavations within AOC-6-1 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM #5A2, as discussed in Section 3.2.5.

AOC-6-1 Soil

One soil boring, B3103, was installed within AOC-6-1 to a maximum depth of 16 ft bgs. COPCs, including PCBs, metals, and VOCs, were not identified above Restricted Residential SCOs. As per the 2019 RI Work Plan, SVOCs were previously collected within 30 ft of AOC-6-1 including B38 and B404 where concentrations were not identified above Restricted Residential SCOs.

AOC-6-1 Groundwater

Potential impacts of AOC-6-1 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. MW-65 was located within AOC-6-1. MW-65 was decommissioned and MW-65R installed as a replacement monitoring well downgradient of AOC-6-1. Groundwater samples collected as part of the RI investigation of AOC-6-1 were analyzed for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at or downgradient of AOC-6-1.

AOC-6-1 Summary

AOC-6-1 is a former concrete vault located in the NAF (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient

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to evaluate the nature and extent of AOC-6-1 and to evaluate potential migration pathways in accordance with RI objectives. PCBs, metals, SVOCs, and VOCs were not observed in soil above Restricted Residential SCOs. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-6-1 on the Revised BCP Site. PCBs, metals, SVOCS, and VOCs were not detected above TOGS groundwater standards at or downgradient of AOC-6-1.

5.2.13.2 AOC-6 – FFC (AOC-6-2, AOC-6-7, AOC-6-8, AOC-6-9, AOC-6-10)

AOC-6-2, AOC-6-7, AOC-6-8, AOC-6-9, and AOC-6-10 are located in the FFC (F**igure 1-4**). Potential impacts to AOC-6-FFC have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-6 are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Media of concern associated with AOC-6 includes soil and groundwater. COPCs proposed for investigation of AOC-6 as part of the RI Work Plan (Geosyntec, 2019a) include PCBs, metals, SVOCs, and VOCs. Excavations within AOC-6 in the FFC were completed up to 16 ft bgs (approximate depth of water table) as part of the FFC IRM, as discussed in Section 3.2.4. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6.

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AOC-6 FFC Soil

A total of 14 soil borings were installed within AOC-6-FFC to a maximum depth of 16 ft bgs across multiple soil sampling events (Section 2.2). Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. COPCs including PCBs, metals, and SVOCs were identified within AOC-6-FFC above Restricted Residential SCOs. VOCs were not identified within AOC-6 within the FFC above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were observed up to a depth of 14 ft bgs, metals above the Restricted Residential SCO, including arsenic, barium, lead, and nickel, were observed up to a depth of 6 ft bgs, and SVOCs above the Restricted Residential SCO, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene, were observed up to a depth of 2 ft bgs.

A summary of TSCA, Restricted Residential SCO, and PoG SCO exceedances found within AOC-6 within the FFC is provided below. Excavations within AOC-6 on the FFC were completed up to 16 ft bgs (approximate depth to water table) as part of the FFC IRM. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples which have been excavated are noted.

PCBs

- No soil boring samples within AOC-6-FFC had PCBs detected above TSCA level (>= 50 mg/kg).

- The following soil boring samples within AOC-6-FFC had PCBs detected above the PoG SCO (>3.2 mg/kg):
    - AOC-6-10: SSHS-B2229-SUB-0.17-2 (10.5 mg/kg) – Excavated
    - AOC-6-9: SSHS-B2230-SUB-8-10 (6.43 mg/kg) – Remaining in place
    - AOC-6-9: SSHS-B2230-SUB-2-4 (37.2 mg/kg) – Excavated
    - AOC-6-9: SSHS-B2230-SUB-4-6 (19.4 mg/kg) – Excavated
    - AOC-6-8: SSHS-B2231-SUB-2-4 (33.25 mg/kg) – Excavated
    - AOC-6-8: SSHS-B2231-SUB-0.17-2 (3.487 mg/kg) – Excavated
    - AOC-6-8: SSHS-B2231-SUB-6-8 (3.67 mg/kg) – Excavated
    - AOC-6-2: SSHS-B2634-SUB-6-8 (20.64 mg/kg) – Excavated
    - AOC-6-2: SSHS-B2634-SUB-12-14 (12.06 mg/kg) – Excavated
    - AOC-6-2: SSHS-B442-SUB-2-4 (4.41 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-0-2 (16.52 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-2-4 (16.67 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-6-8 (20.99 mg/kg) – Excavated
- The following soil boring samples within AOC-6-FFC had PCBs detected above the Restricted Residential SCO (>1 mg/kg):
    - AOC-6-7: SSHS-B2195-SUB-2-4 (2.87 mg/kg) – Excavated
    - AOC-6-10: SSHS-B2229-SUB-2-4 (1.24 mg/kg) – Excavated
    - AOC-6-9: SSHS-B2230-SUB-0.17-2 (2.01 mg/kg) – Excavated
    - AOC-6-9: SSHS-B2230-SUB-6-8 (2.62 mg/kg) – Excavated
    - AOC-6-8: SSHS-B2231-SUB-4-6 (1.252 mg/kg) – Excavated
    - AOC-6-8: SSHS-B2231-SUB-12-14 (1.47 mg/kg) – Remaining in place
    - AOC-6-2: SSHS-B2535-SUB-10-12 (2.702 mg/kg) – Excavated
    - AOC-6-2: SSHS-B442-SUB-0-2 (2.55 mg/kg) – Excavated
    - AOC-6-2: SSHS-B442-SUB-4-6 (1.172 mg/kg) – Excavated
    - AOC-6-2: SSHS-B617-SS-0-0.17 (1.026 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-12-14 (1.787 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-4-6 (2.92 mg/kg) – Excavated
    - AOC-6-2: SSHS-B650-SUB-8-10 (1.936 mg/kg) – Excavated
    - AOC-6-8: SSHS-B816-SS (1.41 mg/kg) - Excavated

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- AOC-6-9: SSHS-B818-SS (1.38 mg/kg) – Excavated

Metals

- Arsenic – Two samples (SSHS-B2231-SUB-0.17-2 within AOC-6-8, and SSHS-B2231-SUB-4-6 within AOC-6-8) had arsenic detected above the Restricted Residential SCO (>16 mg/kg), and the PoG SCO (> 16 mg/kg), from 0.17-6 ft bgs with concentrations ranging from 17 to 24 mg/kg respectively. These two samples were excavated during the FFC IRM.
- Barium – Three samples (SSHS-B2229-SUB-0.17-2 within AOC-6-10, SSHS-B2231-SUB-2-4 within AOC-6-8, and SSHS-B2231-SUB-4-6 within AOC-6-8) had barium detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (> 820 mg/kg), from 0.17-6 ft bgs with concentrations ranging from 530 to 640 mg/kg respectively. One sample (SSHS-B2230-SUB-2-4) within AOC-6-9 had barium detected above the PoG SCO (>820 mg/kg) from 2-4 ft bgs at 890 mg/kg. These four samples were excavated during the FFC IRM.
- Chromium – No samples within AOC-6-FFC had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg). A total of six samples within AOC-6-FFC had chromium detected above the PoG SCO (>19 mg/kg), but not the Restricted Residential SCO (>110 mg/kg), from 0-6 ft bgs. The maximum concentration of chromium was 37 mg/kg at SSHS-B2195-SS. Five of the six samples were excavated during the FFC IRM. SSHS-B2195-SUB-4-6 remains in place at 36 mg/kg.
- Lead – One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had lead detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (>450 mg/kg), from 0.17-2 ft bgs at 450 mg/kg. Three samples (SSHS-B2195-SUB-4-6 within AOC-6-7, SSHS-B2229-SUB-4-6 within AOC-6-10, and SSHS-B2230-SUB-2-4 within AOC-6-9) had lead detected above the PoG SCO (>450 mg/kg) from 2-6 ft bgs with concentrations ranging from 580 to 1,100 mg/kg respectively. SSHS-B2229-SUB-0.17-2, SSHS-B2229-SUB-4-6, and SSHS-B2230-SUB-2-4 were excavated during the FFC IRM. SSHS-B2195-SUB-4-6 remains in place at 620 mg/kg.
- Nickel – One sample (SSHS-B2195-SUB-4-6) within AOC-6-7 had nickel detected above the Restricted Residential SCO (>310 mg/kg) from 4-6 ft bgs at 650 mg/kg. Two samples (SSHS-B2195-SUB-6-8 within AOC-6-7 and SSHS-B2229-SUB-0.17-2 within AOC-6-10) had nickel detected above the PoG SCO (>130 mg/kg), but not the Restricted Residential SCO (>310 mg/kg), from 0.17-2 and 6-8 ft bgs with concentrations ranging from 170 to 210 mg/kg respectively. SSHS-B2229-SUB-0.17-2 was excavated during the FFC IRM. SSHS-B2195-SUB-4-6 remains in place. SSHS-B2195-SUB-6-8 remains in place at 170 mg/kg.

SVOCs

- Benz(a)anthracene – One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0.17-2 ft bgs. The concentration of benz(a)anthracene was 2.9 mg/kg at SSHS-B2229-SUB-0.17-2. The sample was excavated during the FFC IRM.

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- Benzo(a)pyrene – One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>22 mg/kg), from 0.17-2 ft bgs. No samples within AOC-6-FFC had benzo(a)pyrene detected above the PoG SCO (>22 mg/kg). The concentration of benzo(a)pyrene was 2.6 mg/kg at SSHS-B2229-SUB-0.17-2. The sample was excavated during the FFC IRM.
- Benzo(b)fluoranthene – One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1.7 mg/kg) from 0.17-2 ft bgs. The concentration of benzo(b)fluoranthene was 3.7 mg/kg at SSHS-B2229-SUB-0.17-2. The sample was excavated during the FFC IRM.
- Chrysene – No samples within AOC-6-FFC had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg). One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had chrysene detected above the PoG SCO (>1 mg/kg) from 0.17-2 ft bgs. The concentration of chrysene was 2.6 mg/kg at SSHS-B2229-SUB-0.17-2. The sample was excavated during the FFC IRM.
- Indeno(1,2,3-cd)pyrene – One sample (SSHS-B2229-SUB-0.17-2) within AOC-6-10 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg), but not the PoG SCO (>8.2 mg/kg), from 0.17-2 ft bgs. No samples within AOC-6-FFC had indeno(1,2,3-cd)pyrene detected above the PoG SCO (>8.2 mg/kg). The concentration of indeno(1,2,3-cd)pyrene was 0.72 mg/kg at SSHS-B2229-SUB-0.17-2. The sample was excavated during the FFC IRM.

VOCs

- Acetone – No samples within AOC-6-FFC had acetone detected above the Restricted Residential SCO (>100 mg/kg). One sample (SSHS-B2230-SUB-12-14) within AOC-6-9 had acetone detected above the PoG SCO (>0.05 mg/kg), but not the Restricted Residential SCO (>100 mg/kg), from 12-14 ft bgs. The concentration of acetone was 0.057 mg/kg at SSHS-B2230-SUB-12-14. This SCO exceedance is remaining in place.

<u>AOC-6 FFC Groundwater</u>

Potential impacts of AOC-6 on groundwater quality in the FFC were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells MW-44, MW-38, MW-36 are located downgradient of AOC-6 within the FFC. Temporary monitoring wells B3864S (analyzed for PCBs), B3864I (analyzed for PCBs, metals, SVOCs, and VOCs), B3859S (analyzed for PCBs), B3859I (analyzed for PCBs), B3869S (analyzed for PCBs), B3860I (analyzed for PCBs, metals, SVOCs, and VOCs), B3557 (analyzed for PCBs, metals, and VOCs), B3881I (analyzed for PCBs), B3556 (analyzed for PCBs, metals, and VOCs), B2629 (analyzed for PCBs, metals, SVOCs, and VOCs), B3558 (analyzed for PCBs, metals, and VOCs), and B3559 (analyzed for PCBs, metals, and VOCs), are located downgradient of AOC-6 within the FFC. Groundwater samples collected as part of the RI investigation of AOC-6 within the FFC included analysis for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Groundwater analytical results

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including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. Metals, SVOCs, and VOCs were not detected above TOGS groundwater standards downgradient of AOC-6 within the FFC.

PCBs

PCBs were detected above TOGS groundwater standard downgradient of AOC-6-2 at temporary monitoring well B3558 (0.286 µg/L) in January 2021. This exceedance is part of PCB TOGS exceedances at the former slide rail which originated upgradient of AOC-6-2 and is not attributed to this AOC (attributed to AOC-3 as discussed in Section 5.2.9). PCBs were detected downgradient of AOC-6-9 at B3860I (0.19 µg/L) in April 2021. PCBs were not observed above TOGS groundwater standards downgradient of B3860I at MW-44 and MW-38.

AOC-6 FFC Summary

AOC-6 includes discrete areas of former concrete vaults (**Figure 1-4**). AOC-6-2, AOC-6-7, AOC-6-8, AOC-6-9, and AOC-6-10 are located in the FFC. These AOCs were investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-6 within the FFC and to evaluate potential migration pathways in accordance with RI objectives. Analytical results indicate that PCBs, SVOCs, and metals were detected in soil above applicable SCOs up to depths of 14 ft bgs. VOCs were not identified above Restricted Residential SCOs. Soils exceeding applicable SCOs are not confined to AOC-6 and extend beyond the limits of the AOC. COPCs identified in soil within AOC-6 may be related to these historic features but have been removed by FFC IRM excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS.

Observed exceedances of TOGS groundwater standards downgradient of AOC-6 within the FFC are attributed to an upgradient source area (AOC-3). Accordingly, these exceedances are not considered to be primarily attributable to impacts at AOC-6.

Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-6, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-6 on the Revised BCP Site.

5.2.13.3 AOC-6 – EHS Building (AOC-6-3)

AOC-6-3 underlies the EHS Building (AOC-1) (**Figure 1-4**). AOC-6-3 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. Media of concern associated with AOC-6 includes soil and groundwater; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through sub-

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slab vapor sampling. COPCs proposed for investigation of AOC-6 as part of the RI Work Plan (Geosyntec, 2019a) include PCBs, metals, SVOCs, and VOCs.

AOC-6-3 EHS Building Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-6 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-6-3 EHS Building Groundwater

Potential impacts of AOC-6-3 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of AOC-6-3 include MW-85I and MW-13. Groundwater samples collected as part of the RI investigation of AOC-6 were analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, VOCs, and SVOCs were not observed above TOGS groundwater standards at MW-85I and MW-13 downgradient of AOC-6-3.

AOC-6-3 EHS Building Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor sample SSHS-164 was collected within AOC-6-3. VOCs were reported below NYSDOH guidelines at SSHS-164.

AOC-6-3 EHS Building Summary

AOC-6-3 is located underneath the EHS Building (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-6-3, outside of the EHS building footprint.

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PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-6-3. VOCs in sub-slab vapor were reported below NYSDOH guidelines within AOC-6-3.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-6-3 located under the EHS Building is proposed to be managed under the Track 4 remedy.

5.2.14 AOC-7 (Drywell Structures)

AOC-7 is former drywell structures and includes two discrete sections located in separate areas of the Site (**Figure 1-4**). AOC-7-2 is located in the NAF and AOC-7-1 is located underneath the EHS building (AOC-1). Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-7 includes soil; however, since material within the drywells could have migrated from the drywell into groundwater via stormwater, groundwater was also evaluated. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with the AOC-7 are PCBs, metals, SVOCs, and VOCs. Portions of AOC-7-2 are located outside of the Revised BCP Site. A drywell structure was identified and subsequently removed at AOC-7-2 during ISMP excavations completed concurrently with IRM #5A2 and further discussed in Section 6.

Soil and groundwater potentially associated with AOC-7 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the off-Site RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-7 have been delineated vertically. For each AOC-7 area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

5.2.14.1 AOC-7 – NAF (AOC-7-2)

AOC-7-2 Soil

Two soil borings were installed adjacent and downgradient of AOC-7-2, B3852 and B71. COPCs including PCBs and metals were identified above Restricted Residential SCOs. SVOCs and VOCs were not identified above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were observed up to a depth of 4 ft bgs. Metals above the Restricted Residential SCO, including cadmium, chromium, and nickel, were observed up to a depth of 32 ft bgs.

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PCBs

- B3852 and B71 did not have PCBs detected above TSCA level (>= 50 mg/kg) or the PoG SCO (>3.2 mg/kg).
- PCBs were detected above the Restricted Residential SCO (>1 mg/kg) at SSHS-B3852-SUB-2-4 (2.35 mg/kg). This sample was excavated.

Metals

- Cadmium – One sample (SSHS-B3852-SUB-30-32) collected adjacent and downgradient to AOC-7-2 had cadmium detected above the Restricted Residential SCO (>4.3 mg/kg), but not the PoG SCO (>7.5 mg/kg), from 30-32 ft bgs at 5.6 mg/kg. SSHS-B3852-SUB-30-32 remains in place below the water table.
- Chromium – One sample (SSHS-B3852-SUB-30-32) collected adjacent and downgradient to AOC-7-2 had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg) and PoG SCO (>19 mg/kg), from 30-32 ft bgs at 490 mg/kg. One sample (SSHS-B3852-SUB-28-30) had chromium detected above the PoG SCO (>19 mg/kg), but not the Restricted Residential SCO (>110 mg/kg) from 28-30 ft bgs at 93 mg/kg. Both samples remain in place below the water table.
- Nickel – One sample (SSHS-B3852-SUB-30-32) collected adjacent and downgradient to AOC-7-2 had nickel detected above the Restricted Residential SCO (>310 mg/kg) and PoG SCO (>130 mg/kg) from 30-32 ft bgs at 380 mg/kg. One sample (SSHS-B3852-SUB-28-30) collected adjacent to AOC-7-2 had nickel detected above the PoG SCO (>130 mg/kg), but not the Restricted Residential SCO (>310 mg/kg) from 28-30 ft bgs at 140 mg/kg. Both samples remain in place below the water table.

AOC-7-2 Groundwater

Potential impacts of AOC-7-2 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed downgradient of AOC-7-2 include MW-65 and MW-65R. Monitoring wells were installed in the vicinity of AOC-7-2 to the north at MW-66S and MW-66I. Groundwater samples were analyzed for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, SVOCs, metals, and VOCs were not detected above TOGS groundwater standards cross or downgradient of AOC-7-2.

AOC-7-2 Summary

AOC-7-2 is characterized by NYSDEC as a drywell structure and is located on the NAF. A drywell structure was encountered at AOC-7-2 during ISMP excavation completed concurrently with IRM #5A2. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-7-2 and to evaluate potential migration pathways in

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accordance with RI objectives. Analytical results indicate that PCBs were detected in soil above applicable SCOs up to depths of 4 ft bgs and metals between 28-32 ft bgs. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

PCBs, SVOCs, metals, and VOCs were not detected above TOGS groundwater standards cross or downgradient of AOC-7-2. Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-7-2, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-7-2 on the Revised BCP Site.

5.2.14.2 AOC-7 – EHS Building (AOC-7-1)

AOC-7-1 underlies the EHS Building (AOC-1) (**Figure 1-4**). AOC-7-1 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. The media of concern associated with AOC-7 as per the 2019 RI Work Plan included soil; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through downgradient groundwater and sub-slab vapor sampling discussed below. COPCs associated with AOC-7-1 are PCBs, metals, SVOCs, and VOCs.

AOC-7-1 Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-7-1 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-7-1 Groundwater

Potential impacts of AOC-7-1 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of AOC-7-1 include MW-90S, MW-90I, MW-91S, and MW-91I. Groundwater samples collected as part of the RI investigation of AOC-7-1 were analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1**

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through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not observed above TOGS groundwater standards downgradient of AOC-7-1.

AOC-7-1 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples were collected near AOC-7-1 in Room 103 (SS-103) and Room 106 (SSHS-14-SS) and were observed below NYSDOH Matrix Guidelines for sub-slab vapor.

AOC-7-1 Summary

AOC-7-1 is a possible drywell structure. This AOC is located underneath the EHS Building (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-7-1, outside of the EHS building footprint. PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient AOC-7-1. VOCs were reported below NYSDOH guidelines in sub-slab vapor samples collected near AOC-7-1.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-7-1 located under the EHS Building is proposed to be managed under the Track 4 remedy.

5.2.15 AOC-8 (Westinghouse Transformer Spill near Building 28A)

AOC-8 is the area of a former Westinghouse PCB transformer spill near former Building 28A (**Figure 1-3**). AOC-8 consists of a single area located within the southwestern portion of the FFC (**Figure 1-4**). CCHD hypothesized as part of this release, drained oil entered a drain at the base of the loading dock adjacent to Building 28A and flowed into the storm sewer system, as previously discussed in Section 1.4.1. From there, it passed through an oil-water separator and discharged to a site culvert, which drained to tributaries in a wetland and then to Coldbrook Creek. This AOC reflects the location where the initial release occurred. Investigation of the oil water separator and site culvert are being addressed under NYSDEC Site #808043.

This historical transformer spill had the potential to have resulted in release of COPCs to underlying soil. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated

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with AOC-8 includes soil and groundwater, and COPCs associated with AOC-8 are PCBs, metals, SVOCs, and VOCs.

Potential impacts to AOC-8 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-8 are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at or downgradient of AOC-8. Excavations within AOC-8 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM #1 and IRM #3, as discussed in Sections 3.2.1 and 3.2.3, respectively.

Soil and groundwater potentially associated with AOC-8 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. COPCs including PCBs and metals were identified within AOC-8 above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary and are discussed in Section 6. COPCs above applicable SCOs present within AOC-8 have been delineated vertically. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards downgradient of AOC-8. A summary is presented below, including investigations completed, analytical results, and findings.

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AOC-8 Soil

A total of 9 soil borings were installed within AOC-8 to a maximum depth of 16 ft bgs across multiple soil sampling events (Section 2.2). Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. COPCs including PCBs and metals, were identified within AOC-8 above Restricted Residential SCOs. VOCs were not identified within AOC-8 above Restricted Residential SCOs. Soil borings advanced within proximity to AOC-8 and analyzed for SVOCs include SSHS-B70 and SSHS-B2763. PCBs above the Restricted Residential SCO were observed up to a depth of 8 ft bgs and metals above the Restricted Residential SCO, including barium, were observed up to a depth of 6 ft bgs.

A summary of TSCA, Restricted Residential SCO, and PoG SCO exceedances found within AOC-8 is provided below. Excavations within AOC-8 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM #1 and IRM #3. Samples which have been excavated are noted.

PCBs

- The following soil boring samples within AOC-8 had PCBs detected above TSCA level (>= 50 mg/kg):
    - SSHS-B797-SUB-6-8 (184 mg/kg) – Excavated
    - SSHS-B797A-SUB-4-6 (59 mg/kg) – Excavated

- The following soil boring samples within AOC-8 had PCBs detected above the PoG SCO (>3.2 mg/kg) but below the TSCA Level (>=50 mg/kg):
    - SSHS-B336-SUB-0-2 (10.52 mg/kg) – Excavated
    - SSHS-B336A-SUB-2-4 (13.69 mg/kg) – Excavated
    - SSHS-B797-SUB-4-6 (11.45 mg/kg) – Excavated
- The following soil boring sample within AOC-8 had PCBs detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>3.2 mg/kg):
    - SSHS-B336-SUB-2-4 (3.14 mg/kg) – Excavated

Metals

- Barium – One sample (SSHS-B2244-SUB-4-6) within AOC-8 had barium detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (> 820 mg/kg) from 4-6 ft bgs at 970 mg/kg. The sample was excavated during the FFC IRM.
- Chromium – No samples within AOC-8 had chromium detected above the Restricted Residential SCO (>110 mg/kg). Two samples (SSHS-B2244-SUB-4-6 and SSHS-B2244-SUB-6-8) within AOC-8 had chromium detected above the PoG SCO (>19 mg/kg) but below the Restricted Residential SCO (>110 mg/kg) from 4-8 ft bgs. Concentration ranged from 24 (SSHS-B2244-SUB-6-8) to 37 mg/kg (SSHS-B2244-SUB-4-6). These two samples were excavated during the FFC IRM.
- Nickel – No samples within AOC-8 had nickel detected above the Restricted Residential SCO (>310 mg/kg). One sample (SSHS-B2244-SUB-4-6) within AOC-8 had nickel detected above the PoG SCO (>130 mg/kg) but below the Restricted Residential SCO (>310 mg/kg) from 4-6 ft bgs at 160 mg/kg. The sample was excavated during the FFC IRM.

VOCs

- Acetone – No samples within AOC-8 had acetone detected above the Restricted Residential SCO (>100 mg/kg). One sample (SSHS-B2244-SUB-12-14) within AOC-8 had acetone detected above the PoG SCO (>0.05 mg/kg) from 12-14 ft bgs at 0.09 mg/kg. This SCO exceedance is remaining in place.

SVOCs

- Benz(a)anthracene – Two samples (SSHS-B70-2-6 and SSHS-B70-6-10) within proximity to AOC-8 had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 2-10 ft bgs. Concentrations ranged from 1.3 to 6.7 mg/kg, respectively. Both samples were excavated during the FFC IRM.
- Benzo(a)pyrene – Two samples (SSHS-B70-2-6 and B70-6-10) within proximity to AOC-8 had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) but not the PoG SCO (>22 mg/kg) from 2-10 ft bgs. Concentrations ranged from 1.3 to 5.8 mg/kg, respectively. Both samples were excavated during the FFC IRM.

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- Benzo(b)fluoranthene – One sample (SSHS-B70-2-6) within proximity to AOC-8 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) but not the PoG SCO (>1.7 mg/kg) from 2-6 ft bgs at 1.5 mg/kg. One sample (B70-6-10) within proximity to AOC-8 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1.7 mg/kg) from 6-10 ft bgs at 6.9 mg/kg. Both samples were excavated during the FFC IRM.
- Benzo(k)fluoranthene – One sample (SSHS-B70-6-10) within proximity to AOC-8 had benzo(k)fluoranthene detected above the PoG SCO (>1.7 mg/kg) but not the Restricted Residential SCO (>3.9 mg/kg) from 6-10 ft bgs at 2.6 mg/kg. This sample was excavated during the FFC IRM.
- Chrysene – One sample (SSHS-B70-2-6) within proximity to AOC-8 had chrysene detected above the PoG SCO (>1 mg/kg) but not the Restricted Residential SCO (>3.9 mg/kg) from 2-6 ft bgs at 1.4 mg/kg. One sample (SSHS-B70-6-10) within proximity to AOC-8 had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg) and PoG SCO (>1 mg/kg) from 6-10 ft bgs at 6.4 mg/kg. Both samples were excavated during the FFC IRM.
- Dibenz(a,h)anthracene – One sample (B70-6-10) within proximity to AOC-8 had dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg) but not the PoG SCO (>1000 mg/kg) from 6-10 ft bgs at 0.93 mg/kg. This sample was excavated during the FFC IRM.
- Indeno (1,2,3-cd)pyrene – Two samples (SSHS-B70-2-6 and SSHS-B70-6-10) within proximity to AOC-8 had indeno (1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) but not the PoG SCO (>8.2 mg/kg) from 2-10 ft bgs. Concentrations ranged from 0.92 to 3.7 mg/kg, respectively. Both samples were excavated during the FFC IRM.

The nature and extent of COPCs remaining in place in the FFC, including AOC-8, is presented in Section 6.3.2. The nature and extent discussed in Section 6.3.2 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-8.

AOC-8 Groundwater

Potential impacts of AOC-8 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring well MW-39 was located downgradient of AOC-8. Temporary monitoring wells downgradient of AOC-8 include B3855S and B3855I. Groundwater samples collected as part of the RI investigation of AOC-8 at MW-39 were analyzed for PCBs, metals, SVOCs and VOCs. Temporary monitoring wells B3855S and B3855I were analyzed for PCBs. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and

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VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at or downgradient of AOC-8.

AOC-8 Summary

AOC-8 is the area of a former Westinghouse PCB transformer spill near former Building 28A located within the FFC (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCS. The data collected are sufficient to evaluate the nature and extent of AOC-8 and to evaluate potential migration pathways in accordance with RI objectives.

Analytical results indicate that PCBs and metals were detected in soil above the applicable SCOs up to 8 ft and 6 ft bgs, respectively. VOCs were not identified above applicable SCOs. Soil borings advanced within proximity to AOC-8 and analyzed for SVOCs were detected in soil above the applicable SCOs in SSHS-B70 and SSHS-B2763. Impacted soils were addressed through excavation activities conducted as part of IRM #1 and IRM #3 to depths up to 16 ft bgs (approximate depth of water table).

PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-8. Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-8, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further evaluation is warranted to define the nature and extent of impacts in soil and groundwater for AOC-8 on the Revised BCP Site.

5.2.16 AOC-9 (Former Oil Houses)

AOC-9 is former oil houses and consists of two discrete areas (**Figure 1-4**). AOC-9-1 is located in the FFC. AOC-9-2 is located under the EHS Building (AOC-1). AOC-9-1 spatially overlaps with AOC-11 and AOC-3. AOC-9-2 spatially overlaps with AOC-12-3, AOC-16-1, and AOC-17-4. Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. The media of concern associated with AOC-9 as per the 2019 RI Work Plan included soil and groundwater; however, due to physical constraints of sampling beneath the EHS building, AOC-9-2 was further evaluated through downgradient groundwater and sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-9 are PCBs, metals, SVOCs, and VOCs.

Soil and groundwater potentially associated with AOC-9 has been sufficiently investigated to achieve the RI objectives provided in Section 1.5. A summary of each AOC-9 area based on Site Area is provided below, including investigations completed, analytical results, and findings.

5.2.16.1 AOC-9 - FFC (AOC-9-1)

AOC-9-1 is located in the FFC (**Figure 1-4**). Potential impacts to AOC-9-1 have been investigated through collection of soil and groundwater samples. A summary of soil and groundwater samples collected to investigate AOC-9-1 are provided in **Table 1-1**. Soil borings collected as part of the RI investigation of AOC-9-1 are shown compared to Restricted Residential SCOs on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS

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groundwater standards on **Figures 5-8A-1** through **5-8D-2.** Media of concern associated with AOC-9-1 includes soil and groundwater. COPCs associated with AOC-9-1 are PCBs, metals, SVOCs, and VOCs. Excavations within AOC-9-1 were completed up to 16 ft bgs (approximate depth of water table) as part of the FFC IRM, as discussed in Section 3.2.4.

AOC-9-1 Soil

One soil boring, B2053, was installed within AOC-9-1 to a maximum depth of 14 ft bgs. PCBs were identified within AOC-9-1 above Restricted Residential SCOs. These PCB Restricted Residential SCO exceedances were excavated as part of the FFC IRM. Metals, SVOCs, and VOCs were not identified within AOC-9-1 above Restricted Residential SCOs.

A summary of soil Restricted Residential exceedances found within AOC-9-1 is provided below. AOC-9-1 was excavated down to the water table (approximate depth of 16 ft bgs) as part of FFC IRM, and samples which have been excavated are noted.

PCBs

- No soil boring samples within AOC-9-1 had PCBs detected above TSCA level (>= 50 mg/kg).
- No soil boring samples within AOC-9-1 had PCBs detected above the PoG SCO (>3.2 mg/kg).
- The following soil boring sample within AOC-9-1 had PCBs detected above the Restricted Residential SCO (>1 mg/kg):
    - SSHS-B2053-SUB-4-6 (2.499 mg/kg) – Excavated

Metals

- Chromium – No soil boring samples within AOC-9-1 had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg). A total of three samples within AOC-9-1 had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) from 0.17-6. The maximum concentration of chromium (III+VI) was 38 mg/kg at SSHS-B2053-SS. All three samples were excavated during FFC IRM.

The nature and extent of COPCs remaining in place in the FFC, including AOC-9-1, is presented in Section 6.3.2. The nature and extent discussed in Section 6.3.2 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-9-1. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-9 have been delineated vertically.

AOC-9-1 Groundwater

Potential impacts of AOC-9-1 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring well MW-20 is located downgradient of AOC-9-1, off-Site. Temporary monitoring wells installed downgradient of AOC-9-1 include B3876. Groundwater samples collected at MW-20 were analyzed for PCBs, metals,

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SVOCs, and VOCs. Temporary monitoring well B3876 was analyzed for PCBs. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. Temporary monitoring well B3876 was analyzed for PCBs and detected below TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at MW-20.

AOC-9-1 Summary

AOC-9-1 is a former oil house located in the FFC (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The data collected are sufficient to evaluate the nature and extent of AOC-9-1 and to evaluate potential migration pathways in accordance with RI objectives.

Analytical results indicate that PCBs and metals were detected in soil above applicable SCOs up to depths of 6 ft bgs. VOCs were not identified above applicable SCOs. Soils exceeding applicable SCOs are not confined to AOC-9-1 and extend beyond the limits of the AOC. COPCs identified in soil within AOC-9 may be related to this historic feature but have been removed by FFC IRM excavations.

PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient AOC-9-1. Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-9-1, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further evaluation is warranted to define the nature and extent of impacts in soil and groundwater for AOC-9-1 on the Revised BCP Site.

5.2.16.2 AOC-9 – EHS Building (AOC-9-2)

AOC-9-2 is located within the footprint of the EHS building (AOC-1) (**Figure 1-4**). AOC-9-2 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. The media of concern associated with AOC-9-2 as per the 2019 RI Work Plan included soil and groundwater; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through downgradient groundwater and sub-slab vapor sampling. COPCs associated with AOC-9-2 are PCBs, metals, SVOCs, and VOCs.

AOC-9 EHS Building (AOC-9-2) - Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally,

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indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of these features relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-9-2 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through this AOC, the feature has the potential to have resulted in release of COPCs to underlying soil, and there was previous potential for vertical migration through the soil column to the water table at this feature. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

As discussed above, further soil investigation underneath the EHS building is not practicable at this time. The 2019 RI Work Plan proposed one soil boring (SSHS-B3170) in order to investigate AOC-9-2. This sample was completed in 2020 and is located outside the revised BCP Site boundary, to the west of AOC-9-2. This sample will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

AOC-9 EHS Building (AOC-9-2) – Groundwater

Potential impacts of AOC-9-2 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of AOC-9-2 include MW-90S, MW-90I, MW-91S, and MW-91I. Groundwater samples collected as part of the RI investigation of AOC-9-2 were analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not observed above TOGS groundwater standards downgradient of AOC-9-2.

AOC-9 EHS Building (AOC-9-2) – Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples were collected in the vicinity of AOC-9-2 at SS-07-SS and SS-120 and were observed below NYSDOH Matrix Guidelines.

AOC-9 EHS Building (AOC-9-2) – Summary

AOC-9-2 is a former oil house located underneath the EHS building (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-9-2, outside of the EHS building footprint. PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards

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downgradient AOC-9-2. VOCs were reported below NYSDOH guidelines in sub-slab vapor samples collected near AOC-9-2.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-9-2 located under the EHS Building is proposed to be managed under the Track 4 remedy.

5.2.17 AOC-10A (Contaminated Subsurface Soils)

AOC-10A includes metals impacted subsurface soils identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001). AOC-10A includes six discrete sections located in separate areas of the Site, including the NAF (AOC-10A-4, AOC-10A-5, AOC-10A-6) and several located outside of the Revised BCP Site (AOC-10A-1, AOC-10A-2, AOC-10A-3). AOC-10A includes metals at B42 (AOC-10A-4), B43 (AOC-10A-5), and B52 (AOC-10A-6) in the NAF; and metals at B24 (AOC-10A-1), B35 (AOC-10A-2), and SS14 (AOC-10A-3) located within New BCP Site #c808054 (**Figure 1-4**). AOC-10A-5 spatially overlaps with AOC-3A-5. AOC-10A-6 spatially overlaps with AOC-16-3 and AOC-17-9.

Potential releases of metals to underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-10A includes soil; however, since contamination in soil could have migrated into groundwater via leaching, groundwater was also evaluated. COPCs associated with the AOCs are metals. As AOC-10A-1, AOC-10A-2, and AOC-10A-3 are located outside of the Revised BCP Site, investigation findings and associated conclusions for these areas within New BCP Site #c808054 will be discussed in the #c808054 RI/AA.

Soil and groundwater potentially associated with the AOC-10A has been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-10A have been delineated vertically.

<u>AOC-10A Soil</u>

AOC-10A-4 is associated with metals previously identified at B42 from 0.5-2.5 ft bgs. At B42, arsenic was detected at 32.1 mg/kg, copper at 4,080 mg/kg, lead at 783 mg/kg, and nickel at 517 mg/kg, above the Restricted Residential SCOs. B42 was removed during excavation of IRM #5A2. B3277 and B3070 were advanced adjacent to AOC-10A-4.

AOC-10A-5 is associated with metals previously identified at B43 from 0.5-2.5 ft bgs. At B43, lead was detected at 2,210 mg/kg, above the Restricted Residential SCO of 400 mg/kg and PoG SCO of 450 mg/kg. B43 was removed during excavation of IRM #5A2. As per the 2019 RI Work

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Plan, B3079 was advanced to investigate AOC-10A-6. B3631 was also advanced adjacent and downgradient to AOC-10A-5.

AOC-10A-6 is associated with metals previously identified at B52 in surface level sampling completed in 2000. Barium was detected at 144 mg/kg. B52 was removed during excavation of IRM #5A2. As per the 2019 RI Work Plan, B3045 was installed to investigate AOC-10A-6. In addition, B3029 was advanced adjacent and downgradient to AOC-10A-6 and used to evaluate this AOC.

Metals, including arsenic, barium, chromium (III+VI), copper, lead, and nickel, were observed up to a depth of 14 ft bgs at boring locations listed above completed to further investigate AOC-10A-4, AOC-10A-5, and AOC-10A-6.

- Arsenic – Two samples (SSHS-B3631-SUB-2-4 and SSHS-B3070-SUB-12-14) collected adjacent to AOC-10A-4 and AOC-10A-5 had arsenic detected above the Restricted Residential SCO (>16 mg/kg) and PoG SCO (>16 mg/kg) from 2-4 and 12-14 ft bgs with a concentration of 18 mg/kg for both samples. SSHS-B3631-SUB-2-4 was excavated during IRM #5A2. SSHS-B3070-SUB-12-14 remains in place.
- Barium – One sample (SSHS-B3070-SUB-2-4) adjacent to AOC-10A-4 had barium detected above the Restricted Residential SCO (>400 mg/kg) and the PoG SCO (> 820 mg/kg) from 2-4 ft bgs at 15,000 mg/kg. This sample was excavated during IRM #5A2.
- Chromium – Two samples (SSHS-B3631-SUB-2-4 and SSHS-B3631-SUB-4-6) adjacent to AOC-10A-5 had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) from 2-4 and 4-6 ft bgs at 110 mg/kg and 22 mg/kg, respectively, but were below the Restricted Residential SCO (>110 mg/kg). These samples were analyzed for hexavalent chromium and were non-detect. One sample (SSHS-B3045-SUB-0-0.17) adjacent to AOC-10A-6, had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) from 0-0.17 ft bgs at 33 mg/kg, but was below the Restricted Residential SCO (>110 mg/kg). SSHS-B3045-SUB-0-0.17 and SSHS-B3631-SUB-2-4 were excavated during IRM #5A2. SSHS-B3631-SUB-4-6 remains in place.
- Copper – Two samples (SSHS-B3277-SUB-2-4 and SSHS-B3277-SUB-4-6) collected adjacent to AOC-10A-4 had copper detected above the Restricted Residential SCO (>270 mg/kg), but not the PoG SCO (>1,720 mg/kg). Concentrations ranged from 320 to 440 mg/kg, respectively. One sample (SSHS-B3631-SUB-2-4) collected adjacent to AOC-10A-5 had copper detected above the Restricted Residential SCO (>270 mg/kg), but not the PoG SCO (>1,720 mg/kg) from 2-4 ft bgs, at 460 mg/kg. SSHS-B3277-SUB-2-4 and SSHS-B3631-SUB-2-4 were excavated during IRM #5A2. SSHS-B3277-SUB-4-6 remains in place at 440 mg/kg.
- Lead – One sample (SSHS-B3631-SUB-2-4) collected adjacent to AOC-10A-5 had lead detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (>450 mg/kg), from 2-4 ft bgs at 440 mg/kg. This sample was excavated during IRM #5A2.

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- Nickel – One sample (SSHS-B3631-SUB-2-4) collected adjacent to AOC-10A-5 had nickel detected above the Restricted Residential SCO (>310 mg/kg) and the PoG SCO (>130 mg/kg) from 2-4 ft bgs at 380 mg/kg. This sample was excavated during IRM #5A2.

AOC-10A Groundwater

Potential impacts of AOC-10A on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring well MW-55 was installed within AOC-10A-4. Monitoring well MW-54 and MW-54R were installed downgradient of AOC-10A-5. Monitoring well MW-56 was installed in the vicinity of AOC-10A-6 and MW-57R installed downgradient. Results are shown compared to TOGS groundwater standards for metals on **Figures 5-5B-1** and **5-5B-2.** Groundwater analytical results including those from previous investigations are presented on **Table 5-9** for metals. Metals were observed below TOGS groundwater standards at these locations.

AOC-10A NAF Summary

AOC-10A includes metals impacted subsurface soils identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001) and includes three discrete areas in the NAF (AOC-10A-4, AOC-10A-5, AOC-10A-6). Metals were previously identified at B42 (AOC-10A-4), B43 (AOC-10A-5), and B52 (AOC-10A-6) in the NAF. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of metals. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-10A and to evaluate potential migration pathways in accordance with RI objectives.

Analytical results indicate metals were detected in soil above applicable SCOs up to depths of 14 ft bgs. Soils exceeding applicable SCOs are not confined to AOC-10A and extend beyond the limits of the AOC. COPCs identified in soil might have been related to historic disposal activities but have since been removed by IRM #5A2 excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

Metals were observed below TOGS groundwater standards within or downgradient of AOC-10A. Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-10A, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-10A on the Revised BCP Site.

5.2.18 AOC-10B (Contaminated Subsurface Soils)

AOC-10B includes subsurface soils impacted by PCBs, SVOCs or VOCs identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001) (**Figure 1-4**). AOC-10B includes five discrete sections located in the FFC. AOC-10B includes PCBs previously identified at B3 (AOC-10B-1), FB7 (AOC-10B-2) and B15 (AOC-10B-3); and VOCs previously identified at FB5 (AOC-10B-4); and SVOCs previously identified at FB6 (AOC-10B-5). AOC-10B-1 spatially overlaps with AOC-16-3. AOC-10B-2 spatially overlaps with AOC-10C-5, AOC-11, and AOC-16-5. AOC-10B-4 spatially overlaps with AOC-11 and AOC-16-5.

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Potential releases of PCBs, SVOCs and VOCs in underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-10B includes soil; however, since contamination in soil could have migrated into groundwater via leaching, groundwater was also evaluated. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with the AOC-10B are PCBs (AOC-10B-1, AOC-10B-2 and AOC-10B-3), SVOCs (AOC-10B-5), and VOCs (AOC-10B-4).

Soil and groundwater potentially associated with the AOC-10B has been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-10B have been delineated vertically. For each AOC-10B area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

AOC-10B Soil - PCBs

AOC-10B-1 is associated with PCBs previously identified by NYSDEC at B3. PCB concentrations for B3 collected in 2000 were reported in the September 2001 NYSDEC Sampling report as non-detect; however, this sample location was further investigated under the RI by B2024 and B2025. Excavations within AOC-10B-1 were completed up to 12 ft bgs as part of the FFC IRM.

AOC-10B-2 is associated with PCBs at 160 mg/kg previously identified at FB7 from 1.5-2 ft bgs. FB7-A, FB7-B, FB7-BA, FB7-C, FB7-D, FB7-DA, and FB7-E were advanced within or adjacent to AOC-10B-2. Excavations within AOC-10B-2 were completed up to 10 ft bgs as part of the FFC IRM.

AOC-10B-3 is associated with PCBs at 80.1 mg/kg previously identified at B15 from 4-5 ft bgs. B251, B252, B257, and B672 were advanced adjacent to AOC-10B-3. Excavations within AOC-10B-3 were completed up to 15 ft bgs as part of the FFC IRM.

A summary of PCB soil exceedances found in proximity to AOC-10B-1, AOC-10B-2, and AOC-10B-3 are provided below. Samples which have been excavated are noted.

PCBs

- The following soil samples adjacent to AOC-10B-3 had PCBs above TSCA level (>= 50 mg/kg):
    - SSHS-FB7-D-SUB-2-3 (690 mg/kg) – Excavated
    - SSHS-FB7 (160 mg/kg) – Excavated
    - SSHS-B257-SUB-4-6 (59.1 mg/kg) – Excavated
- The following soil boring samples within AOC-10B had PCBs detected above the PoG SCO (>3.2 mg/kg), but below TSCA level (>= 50 mg/kg):
    - AOC-10B-2: SSHS-FB7-A-SUB-1-2 (26.9 mg/kg) – Excavated

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- AOC-10B-2: SSHS-FB7-B-SUB-1-2 (30.2 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-B-SUB-2-3 (9.9 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-BA-SUB-4-6 (7.26 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-C-SUB-1-2 (23.2 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-C-SUB-0.17-1 (FB7-DUP4: 3.76 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-D-SUB-2-3 (FB7-DUP2: 13.8 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-D-SUB-1-2 (6.8 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-DA-SUB-4-6 (23.53 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-E-SUB-1-2 (25.6 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-E-SS (FB7-DUP3: 9.3 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-E-SUB-0.17-1 (7.1 mg/kg) – Excavated
- AOC-10B-2: SSHS-FB7-E-SUB-2-3 (8.3 mg/kg) – Excavated
- AOC-10B-3: SSHS-B251-SUB-2-3 (8.35 mg/kg) – Excavated
- AOC-10B-3: SSHS-B257-SUB-6-8 (25.3 mg/kg) – Excavated
- AOC-10B-3: SSHS-B257-SUB-2-4 (8.58 mg/kg) – Excavated
- AOC-10B-3: SSHS-B257-SUB-8-10 (5.47 mg/kg) – Excavated

- The following soil boring samples within AOC-10B had PCBs detected above the Restricted Residential SCO (>1 mg/kg), but below the PoG SCO (>3.2 mg/kg):
  - AOC-10B-1: SSHS-B2025-SUB-0.17-2 (2.12 mg/kg) – Excavated
  - AOC-10B-2: SSHS-FB7-A-SUB-2-3 (2.1 mg/kg) - Excavated
  - AOC-10B-3: SSHS-B257 (2.7 mg/kg) – Excavated
  - AOC-10B-3: SSHS-B251-SUB-0-2 (1.146 mg/kg) – Excavated

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AOC-10B Soil - SVOCs

AOC-10B-5 is associated with SVOCs previously identified at FB6 from 1-2 ft bgs. SVOCs identified at FB6 from 1-2 ft bgs included benz(a)anthracene (68 mg/kg), benzo(a)pyrene (57 mg/kg), benzo(b)fluoranthene (43 mg/kg), benzo(k)fluoranthene (40 mg/kg), chrysene (62 mg/kg), dibenz(a,h)anthracene (9.6 mg/kg), fluoranthene (190 mg/kg), indeno(1,2,3-cd)pyrene (31 mg/kg), phenanthrene (150 mg/kg), and pyrene (140 mg/kg). B450, FB6-A, and B2234 were advanced within or in proximity to AOC-10B-5.

SVOCs

- Benz(a)anthracene – One sample (SSHS-B450-SUB-0-2) advanced in proximity to AOC-10B-5 had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0-2 ft bgs at 1.1 mg/kg. The sample was excavated during the FFC IRM.

- Benzo(a)pyrene – One sample (SSHS-B450-SUB-0-2) within AOC-10B-5 had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>22 mg/kg), from 0-2 ft bgs at 1.1 mg/kg. The sample was excavated during the FFC IRM.
- Benzo(b)fluoranthene – One sample (SSHS-B450-SUB-0-2) advanced in proximity to AOC-10B-5 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>1.7 mg/kg), from 0-2 ft bgs at 1.4 mg/kg. The sample was excavated during the FFC IRM.
- Chrysene – No samples advanced in proximity to AOC-10B-5 had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg). One sample (SSHS-B450-SUB-0-2) advanced in proximity to AOC-10B-5 had chrysene detected above the PoG SCO (>1 mg/kg) from 0-2 ft bgs at 1.2 mg/kg. The sample was excavated during the FFC IRM.
- Indeno(1,2,3-cd)pyrene – One sample (SSHS-B450-SUB-0-2) advanced in proximity to AOC-10B-5 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg), but not the PoG SCO (>8.2 mg/kg), from 0-2 ft bgs at 0.87 mg/kg. The sample was excavated during the FFC IRM.

AOC-10B Soil - VOCs

AOC-10B-4 is associated with VOCs previously identified at FB5 for TCE at 2-4 ft bgs (110 mg/kg) and 6-8 ft bgs (11 mg/kg). FB5-A, FB5-B, FB5-C, FB5-D, and FB5-E were installed within and/or in proximity to AOC-10B-4.

VOCs

Acetone – No samples had acetone detected above the Restricted Residential SCO (>100 mg/kg). Two samples (SSHS-FB5-B-SS and SSHS-FB5-C-SS) advanced within and/or adjacent to AOC-10B-4 had acetone detected above the PoG SCO (>0.05 mg/kg), but not the Restricted Residential SCO (>100 mg/kg), from 0-0.17 ft bgs with concentrations ranging from 0.097 to 0.24 mg/kg. These samples were excavated during the FFC IRM. No samples were detected above Restricted Residential (21 mg/kg) or PoG (0.47 mg/kg) SCOs for TCE as part of soil investigation for AOC-10B-4.

AOC-10B Groundwater – PCBs

Potential impacts of AOC-10B on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring well MW-20 is located downgradient of AOC-10B-1, off-Site. Temporary monitoring well B3874 was installed adjacent to AOC-10B-1 to the north. Groundwater samples collected at MW-20 and temporary monitoring well B3874 were analyzed for PCBs. Results are shown compared to TOGS groundwater standards on Figures **5-8A-1** and **5-8A-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8** for PCBs and compared to TOGS groundwater standards. PCBs were not detected above TOGS groundwater standards at MW-20 and B3874.

AOC-10B Groundwater – SVOCs

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Potential impacts of AOC-10B on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. MW-44 and MW-48 and temporary monitoring wells B3864I, B3877I, and B3877S are located downgradient of AOC-10B-5. Groundwater samples collected at these locations were analyzed for SVOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-8C-1** through **5-8C-2**. Groundwater analytical results, including those from previous investigations, are presented in **Tables 5-10** for SVOCs and compared to TOGS groundwater standards. SVOCs were not detected above TOGS groundwater standards at MW-44 and MW-48 and temporary monitoring wells B3864I, B3877I, and B3877S.

AOC-10B Groundwater – VOCs

Potential impacts of AOC-10B on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. MW-11S and MW-11I and temporary monitoring wells B2544, B2544A, B3092A and B2978b are located downgradient of AOC-10B-4. MW-11I and B2978b are located off-Site and to the east on NSRC property. Groundwater samples collected at these locations were analyzed for VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-8D-1** through **5-8D-2**. Groundwater analytical results, including those from previous investigations, are presented in **Tables 5-11** for VOCs and compared to TOGS groundwater standards.

TCE was observed above TOGS groundwater standards downgradient of AOC-10B-4 at MW-11I, B2544, B2544A, B3092, and B2978b. TCE was observed below TOGS groundwater standards at MW-11S. MW-11I was sampled for VOCs as part of two sampling events in July 2025 and November 2025. TCE was observed at 7 µg/L in November 2025 above TOGS groundwater standards (5 µg/L). TCE was previously observed at MW-11I to be 1.5 µg/L in July 2025, below TOGS groundwater standards. Concentrations observed in temporary monitoring wells downgradient of AOC-10B-4 for TCE ranged from 6.3 µg/L (B2544A) to 20 µg/L (B2544). Although not identified during the RI, TCE impacted soils were encountered during the FFC IRM within the vicinity of AOC-10B-4 and were the source for the TCE concentrations in groundwater downgradient of this AOC. This TCE impacted soils area were excavated as part of the FFC IRM.

AOC-10B Summary

AOC-10B includes subsurface soils impacted by PCBs, SVOCs or VOCs identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001) and includes five discrete sections located in the FFC. PCBs were previously identified at B3 (AOC-10B-1), FB7 (AOC-10B-2) and B15 (AOC-10B-3); VOCs were previously identified at FB5 (AOC-10B-4); and SVOCs were previously identified at FB6 (AOC-10B-5). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of PCBs, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-10B and to evaluate potential migration pathways in accordance with RI objectives.

Analytical results indicate COPCs were detected in soil above applicable SCOs up to depths of 10 ft bgs. Soils exceeding applicable SCOs are not confined to AOC-10B and extend beyond the limits of the AOC. COPCs identified in soil within AOC-10B may be related to historic disposal activities but have been removed by FFC IRM excavations except at locations noted above.

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Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

PCBs and SVOCs were observed below TOGS groundwater standards within or downgradient of AOC-10B. TCE was observed above TOGS groundwater standards downgradient of AOC-10B-4 and is attributed to TCE identified in soils during the FFC IRM and ISMP excavations.

Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-10B, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-10B on the Revised BCP Site.

5.2.19 AOC-10C (Contaminated Subsurface Soils)

AOC-10C includes areas of petroleum impacts in subsurface soils identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001). AOC-10C consists of five discrete sections (AOC-10C-1, AOC-10C-2, AOC-10C-3, AOC-10C-4, AOC-10C-5) in the FFC (**Figure 1-4**). AOC-10C-1 spatially overlaps with AOC-16-4 and AOC-3. AOC-10C-2 spatially overlaps with AOC-11 and AOC-3. AOC-10C-3 and AOC-10C-4 spatially overlap with AOC-3. AOC-10C-5 spatially overlaps with AOC-16-5 and AOC-10B-2.

A sheen was observed at the water table during groundwater sampling at the AOC in previous investigations (Geosyntec, 2017). Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-10C includes soil and groundwater, and COPCs associated with AOC-10C are SVOCS, VOCs, and Diesel Range Organics (DRO).

Potential impacts to AOC-10C have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-10C are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Media of concern associated with AOC-10C includes soil for SVOCs and VOCs and groundwater for SVOCs, VOCs, and DRO as part of the RI Work Plan (Geosyntec, 2019a). Excavations within AOC-10C were completed up to 12 ft bgs as part of the FFC IRM, as discussed in Section 3.2.4.

Soil and groundwater potentially associated with the AOC-10C has been sufficiently investigated to achieve the RI objectives provided in Section 1.5. A summary is presented below, including investigations completed, analytical results, and findings.

<u>AOC-10C - Soil</u>

A total of 18 soil borings were installed within AOC-10C to a maximum depth of 34 ft bgs. Soil borings collected within AOC-10C include samples collected as part of the RI Work Plan (Geosyntec, 2019a) on a 60x60 ft grid to the water table and subsequent step out samples on approximately 30 ft spacing to further define the nature and extent of COPCs observed above

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Restricted Residential SCOs. SVOCs and VOCs were not identified within AOC-10C above Restricted Residential or PoG SCOs.

AOC-10C - Groundwater

Potential impacts of AOC-10C on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells MW-44, MW-38, MW-102S, MW-102I are located downgradient of AOC-10C. These monitoring wells were sampled for SVOCS and VOCs and reported below TOGS groundwater standards. MW-38 was sampled for TPH-DRO with concentrations detected between 2,300 and 3,100 µg/L. Temporary monitoring wells B2542 (AOC-10C-1) and B2543 (AOC-10C-2) were analyzed for SVOCs, with concentrations reported below TOGS groundwater standards. Temporary monitoring well B2542A is located within AOC-10C-1 and was analyzed for VOCs, with concentrations reported below TOGS groundwater standards. Temporary monitoring wells B2541, B3865A, B3865I, and B3860I are located downgradient of AOC-10C and were analyzed for SVOCs. Concentrations were reported below TOGS groundwater standards. Temporary monitoring wells B3093, B3094, and B3860I are located downgradient of AOC-10C and were analyzed for VOCs. Concentrations were reported below TOGS groundwater standards. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Analytical results including those from previous investigations are presented in **Tables 5-10,** and **5-11** for SVOCs/TPH-DRO and VOCS, respectively, and are compared to TOGS groundwater standards.

AOC-10C Summary

AOC-10C includes areas of petroleum impacts in subsurface soils identified during the NYSDEC environmental investigation in 2000 (NYSDEC, 2001) located in the FFC. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including SVOCs, VOCS, and DRO. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-10C and to evaluate potential migration pathways in accordance with RI objectives. SVOCs and VOCs were not identified within AOC-10C above Restricted Residential SCOs or nuisance criteria. VOCs and SVOCs were observed below TOGS groundwater standards within or downgradient of AOC-10C.

5.2.20 AOC-10D (Contaminated Subsurface Soils)

AOC-10D includes areas of oil-impacted soils identified in previous investigation of the EHS building footprint (Empire, 1977) and includes six discrete sections (AOC-10D-1, AOC-10D-2, AOC-10D-3, AOC-10D-4, AOC-10D-5, AOC-10D-6). AOC-10D is primarily located underneath the EHS Building (AOC-1), with a small portion of AOC-10D-4 extending beyond the EHS Building onto the FFC (**Figure 1-4**). Multiple AOCs spatially overlap AOC-10D.

- AOC-10D-2: Spatially overlaps with AOC-11, AOC-4, AOC-10A-3, AOC-11B, AOC-17-8, AOC-2E, and AOC-10D-3
- AOC-10D-3: Spatially overlaps with AOC-11 and AOC-10D-2.
- AOC-10D-4: Spatially overlaps with AOC-6-2, AOC-6-3, AOC-15-2, and AOC-17-8.

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- AOC-10D-5: Spatially overlaps with AOC-17-6, AOC-17-5, and AOC-10D-6.
- AOC-10D-6 spatially overlaps with AOC-3, AOC-5-3, AOC-10D-5, AOC-16-1, AOC-17-4, AOC-17-5, AOC-17-6, and AOC-12-3.

Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. The media of concern associated with AOC-10D as per the 2019 RI Work Plan included soil and groundwater; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through sub-slab vapor sampling for AOC-10D locations beneath the building. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-10D in soil are SVOCs and VOCs and in groundwater for SVOCs, VOCs, and DRO. AOC-10D-3 is located outside of the Revised BCP Site to the east of the EHS building, and AOC-10D-2 and AOC-10D-4 are located partially outside of the Revised BCP Site. Investigation findings and associated conclusions for these areas within New BCP Site #c808054 will be discussed in the #c808054 RI/AA.

Potential impacts to AOC-10D have been investigated through collection of soil, groundwater and soil-vapor samples. Soil borings collected as part of the RI investigation of AOC-10D are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**.

Soil and groundwater potentially associated with the AOC-10D have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. A summary is included below based on Site area, including investigations completed, analytical results, and findings.

5.2.20.1 AOC-10D – FFC (AOC-10D-4)

AOC-10D-4 Soil

AOC-10D-4 is located underneath the gymnasium of the EHS building, with portions extending into the FFC and outside of the Revised Site boundary. A total of three soil borings were installed within AOC-10D-4, where feasible, to a maximum depth of 44 ft bgs across multiple soil sampling events (Section 2.2). SVOCs and VOCs were not identified within AOC-10D-4 above Restricted Residential SCOs.

AOC-10D-4 Groundwater

Potential impacts of AOC-10D-4 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells MW-104S and MW-104I were installed within AOC-10D-4. MW-85I, MW-13, MW-88S, MW-88I are located downgradient of AOC-10D. Groundwater samples collected as part of the RI investigation of AOC-10D-4 were analyzed for SVOCs/DRO and VOCs. Results are shown compared to TOGS groundwater standards on Figures **5-5A-1** through **5-5D-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-10** and **5-11** for

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SVOCs/DRO and VOCs, respectively, and are compared to TOGS groundwater standards. VOCs were not reported above TOGS groundwater standards at or downgradient of AOC-10D-4. SVOCs were detected above TOGS groundwater standards within AOC-10D-4 at MW-104S for benz(a)anthracene (0.076J µg/L) and chrysene (0.097J µg/L) in September 2023. SVOC were not detected above TOGS groundwater standards at MW-104S in April 2024. SVOCs were not detected above TOGS groundwater standards downgradient of AOC-10D-4. As further discussed in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent; therefore, additional investigation is not warranted. DRO was detected at MW-13 at concentrations ranging from 1,500 to 3,800 µg/L and MW-88S from 2,200 to 3,400 µg/L.

AOC-10D-4 Sub-Slab Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples SSHS-164 and SSHS-22-SS were collected within AOC-10D-4. VOCs were reported below NYSDOH guidelines at both locations.

AOC-10D-4 Summary

AOC-10D-4 is an area previously identified to have oil-impacted soil (NYSDEC, 2001). AOC-10D-4 is located beneath the EHS building, with portions extending into the FFC and outside of the Revised Site boundary.

Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-10D-4 outside of the EHS building footprint.

VOCs and SVOCs were not detected above Restricted Residential SCOs in the soil samples collected within AOC-10D-4 outside of the EHS Building. VOCs, and SVOCs were not detected in groundwater above TOGS standards within or downgradient AOC-10D-4. VOCs were reported below NYSDOH guidelines in sub-slab vapor samples collected within AOC-10D-4.

5.2.20.2 AOC-10D – EHS Building (AOC-10D-1, AOC-10D-2, AOC-10D-3, AOC-10D-5, AOC-10D-6)

AOC-10D-1, AOC-10D-5, AOC-10D-6 are located entirely underneath the EHS building (**Figure 1-4**). AOC-10D-2 extends partially beyond the Revised Site boundary to the east of the EHS building, and AOC-10D-3 is located primarily outside of the Revised Site boundary to the east of the EHS building. AOC-10D-5 and AOC-10D-6 partially overlap and are located under the F-wing of the EHS building. Investigation findings and associated conclusions for these areas within the New BCP Site #c808054 will be discussed in the #c808054 RI/AA.

AOC-10D EHS Building Soil

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It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-10D underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-10D EHS Building Groundwater

Potential impacts of AOC-10D on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC.

- Monitoring wells installed downgradient of AOC-10D-1, AOC-10D-5, and AOC-10D-6 include MW-90S, MW-90I, MW-91S, MW-91I, MW-71S, and MW-71I.
- Monitoring wells installed within AOC-10D-3 include MW-88S and MW-88I. Monitoring wells MW-86I and MW-9I are located downgradient of AOC-10D-3.
- Monitoring wells installed within AOC-10D-2 include MW-12, MW-87I, MW-88S, and MW-88I. Monitoring wells installed downgradient of AOC-10D-3 include MW-9I, MW-9S, and MW-30.
- Monitoring wells installed within AOC-10D-4 include MW-104S and MW-104I. Monitoring wells installed downgradient of AOC-10D-4 include MW-13, MW-85I, MW-88S, and MW-88I.

Groundwater samples were analyzed for SVOCs and VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in Tables **5-10** and **5-11** for SVOCs and VOCs, respectively, and are compared to TOGS groundwater standards.

SVOCS

SVOCs were not observed above TOGS groundwater standards within or downgradient of AOC-10D-1, AOC-10D-3, AOC-10D-5, and AOC-10D-6.

SVOCs were detected above TOGS groundwater standards within AOC-10D-2 at MW-12 and at adjacent temporary monitoring well B26-A. SVOCs were detected downgradient of AOC-10D-2 at MW-30. B26-A exceeded the TOGS groundwater standard for benz(a)anthracene (3.7 µg/L) and chrysene (7 µg/L) in August 2024. MW-12 exceeded the TOGS groundwater standard for

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benz(a)anthracene (1.2J µg/L) and chrysene (2.8J µg/L) in May 2000. SVOC samples collected at MW-12 in February 2021 and July 2021 were not detected above TOGS groundwater standards. MW-30 exceeded the TOGS groundwater criteria for benz(a)anthracene (1.8J µg/L), benzo(b)fluoranthene (2.3J µg/L), benzo(k)fluoranthene (0.72J µg/L), and chrysene (2.3J µg/L) in July 2019. SVOCs were not detected above TOGS groundwater standards at MW-30 in February 2021 and July 2021.

SVOCs were detected above TOGS groundwater standards within AOC-10D-4 at MW-104S for benz(a)anthracene (0.076J µg/L) and chrysene (0.097J µg/L) in September 2023. SVOC were not detected above TOGS groundwater standards at MW-104S in April 2024. SVOCs were not detected above TOGS groundwater standards downgradient of AOC-10D-4. As further discussed in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent; therefore, additional investigation is not warranted.

VOCS

VOCs were not observed above TOGS groundwater standards within or downgradient of AOC-10D-1, AOC-10D-4, AOC-10D-5, and AOC-10D-6.

VOCS were detected above TOGS groundwater standards within AOC-10D-2 at MW-12 and at adjacent temporary monitoring well SB1. MW-12 was detected above TOGS groundwater standards for cis-1,2 DCE (one exceedance, 9 µg/L), Freon 113 (maximum result 160 µg/L), and TCE (two exceedances, 9 and 6.8 µg/L) in samples collected between May 2000 and July 2007. These VOC compounds were observed as non-detect in February 2021 and July 2021. VOCs were detected downgradient of AOC-10D-2 at MW-9S. MW-9S exceeded the TOGS groundwater standards for Freon 113 (5.4 µg/L) in May 2003. VOCs were not detected above TOGS groundwater standards at MW-9S in February 2021 and April 2024. Therefore, these VOC TOGS groundwater standard exceedances are considered historical in nature and no further investigation is warranted.

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AOC-10D EHS Building Sub-Slab Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples SSHS-16-SS and SSHS-17-SS were collected within AOC-10D-1. Sub-slab soil vapor samples SSHS-01-SS, SSHS-02-SS, SSHS-03-SS, SSHS-08-SS and SS-133 were collected within AOC-10D-6. AOC-10D-5 overlaps AOC-10D-6. SSHS-01-SS was also collected within AOC-10D-5.

VOCs were detected below NYSDOH Matrix Guidelines for the sample locations collected within AOC-10D-1 (SSHS-16-SS and SSHS-17-SS). TCE and cis-1,2-DCE were detected above the NYSDOH Matrix Guidelines at SSHS-02-SS and SSHS-03-SS collected within AOC-10D-6. Based on the detections of TCE and cis-1,2-DCE, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. TCE and cis-1,2-DCE were detected in the F-Wing SSD effluent in June 2018 (340 µg/m^3 and 67 µg/m^3, respectively), December 2020

(43 µg/m^3 and 270 µg/m^3), April 2021 (39 µg/m^3 and 220 µg/m^3), December 2021 (50 µg/m^3 and 360 µg/m^3), November 2023 (339 µg/m^3 and 66.6 µg/m^3), November 2024 (40.8 µg/m3 and 246 µg/m^3), and November 2025 (42 µg/m^3 and 303 µg/m^3) as presented on **Figure 6V-1B**. TCE was detected in effluent in July 2021 at 26 µg/m3, but cis-1,2-DCE was not detected. TCE and cis-1,2-DCE effluent concentrations decreased between June 2018 and July 2021 and increased in December 2021. TCE slightly decreased in November 2023 whereas cis-1,2-DCE slightly increased. In November 2024, TCE and cis-1,2-DCE decreased but then slightly increased in November 2025. This indicates that TCE and cis-1,2-DCE are still present in sub-slab vapor below F-Wing and may be associated with AOC-10D.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-10D EHS Building Summary

AOC-10D includes areas of oil-impacted soils identified in previous investigation of the EHS building footprint (NYSDEC, 2001). AOC-10D-1, AOC-10D-5, AOC-10D-6 are located entirely underneath the EHS building (**Figure 1-4**). AOC-10D-2 extends partially beyond the Revised Site boundary to the east of the EHS building, and AOC-10D-3 is located primarily outside of the Revised Site boundary to the east of the EHS building. Portions of AOC-10D extend beyond the Revised BCP Site boundary, with some areas to be further evaluated under Site #c808054.

Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-10D outside of the EHS building footprint.

SVOCs and VOCs were detected above TOGS groundwater standards within or downgradient of AOC-10D. SVOC detections were sporadic and not reproduced during subsequent sampling events. VOCs detected above TOGS groundwater standards are historical in nature. Recent sampling has demonstrated that VOCS are below TOGS groundwater standards at these locations. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

VOCs in sub-slab vapor were detected above NYSDOH Matrix Guidelines for TCE and cis-1,2-DCE in the AOC-10D beneath the EHS building. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS Building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include

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institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-10D located under the EHS Building is proposed to be managed under the Track 4 remedy. Investigation findings and associated conclusions for the portions of AOC-10D that extend beyond the Revised BCP Site limits will be discussed in the #c808054 RI/AA.

5.2.21 AOC-11 (VOC and Petroleum Impacted Groundwater)

AOC-11 includes multiple discrete areas where COPCs or measurable oil product was previously detected (**Figure 1-4**). These AOCs were not assigned sub-numbers as part of the RI Work Plan. Discrete areas of AOC-11 are located across the Site, including underneath the EHS Building (AOC-1A and AOC-1B). AOC-11A includes area where oil product was previously measured at MW-8, MW-9, MW-10, and MW-32. Multiple AOCs spatially overlap AOC-11, including AOC-2D, AOC-3, AOC-4, AOC-9-1, AOC-10B-2, AOC-10B-5, AOC-10C-2, AOC-10D-2, AOC-13, AOC-15-2, AOC-16-1, AOC-16-3, AOC-16-5, and AOC-17-7.

AOC-11B includes MW-41 where PCBs were previously detected. AOC-11A and AOC-11B are located within the New BCP Site. Findings and conclusions for these AOC located outside of the Revised BCP Site will be documented under the RI for the New BCP Site.

Portions of AOC-11 are located within the FFC and underneath the EHS building. Portions of AOC-11 extend onto the New BCP Site Boundary. Investigation findings and associated conclusions for AOC-11 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

AOC-11 was evaluated using multiple lines of evidence, including groundwater data collected within and downgradient of the AOC and sub-slab vapor sampling data. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. Due to physical constraints of sampling beneath the EHS building, portions of the AOC underneath the EHS were further evaluated by groundwater samples collected downgradient outside of the EHS building footprint and sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-11 are PCBs, metals, SVOCs, and VOCs.

<u>AOC-11 – FFC - Groundwater</u>

Potential impacts of AOC-11 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed within AOC-11 on the FFC area include MW-11S, MW-15S, MW-15D, MW-102I, and MW-102S. Monitoring well MW-11I was also installed within AOC-11 but is located off-Site to the east on NSRC property. Monitoring wells installed downgradient of AOC-11 on the FFC area include MW-44, MW-38, MW-13, MW-85I, and MW-84S. Temporary monitoring wells installed within AOC-11 on the FFC include B2544 (analyzed for PCBs, metals, SVOCs, and VOCs), B2544A (analyzed for VOCs), B3857 (analyzed for PCBs, metals, SVOCs, and VOCs), B2090A (analyzed

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for metals, and VOCs), B3092A (analyzed for VOCs), and B2819 (analyzed for VOCs). Temporary monitoring wells B3859S (analyzed for PCBs), B3859I (analyzed for PCBs), B3861S (analyzed for PCBs), B3861I (analyzed for PCBs), B2752 (analyzed for PCBs, metals, SVOCs, and VOCs), B4007 (analyzed for PCBs) were installed downgradient of the FFC. Temporary monitoring well B2978b was also installed within AOC-11 but is located off-Site to the east on NSRC property. Metals were not observed above TOGS groundwater standards at any of these locations. PCBs were detected above TOGS groundwater standards for MW-15S in 2016 at 0.48 µg/L. MW-15S was decommissioned in preparation for excavation of IRM #1. MW-84S was installed as a replacement monitoring well in August 2021. PCBs were not detected above TOGS groundwater standards at MW-84S or downgradient at B3861S and B3861I; therefore, further assessment is not warranted.

VOCs were detected above the TOGS groundwater standard for TCE within AOC-11 at MW-11I and temporary monitoring wells B2544, B2544A, B2819, B2090A, and B2978b. The maximum concentration of TCE was observed at B2819 at 25 µg/L in May 2019. The downgradient extent of this TOGS groundwater exceedance for TCE is defined off-Site at MW-107S and MW-107I. TCE impacted soils were encountered during the FFC IRM and ISMP excavations within the vicinity of AOC-10B-4 and were the source for the TCE concentrations in groundwater at this area. These TCE-impacted soils were excavated as part of the FFC IRM.

SVOCs were detected above the TOGS groundwater standard at MW-11D and MW-102S. MW-11D is screened below the silty clay aquitard. SVOCs were detected above TOGS groundwater standards at MW-102S in April 2024 but were not previously detected above TOGS groundwater standards in September 2023. As further discussed in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent; therefore, additional investigation is not warranted.

A sheen, which may be an indication of petroleum impact, had previously been observed at MW-11S FFC. No measured layer of NAPL was observed at MW-11S during gauging events. Total Petroleum Hydrocarbons – Diesel range organics (TPH-DRO) was detected at a concentration of 13 mg/L at MW-11S in May 2019.

AOC-11 – EHS Building Groundwater

Potential impacts to groundwater at AOC-11 within the EHS Building area have been assessed through groundwater data collected downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Monitoring wells downgradient outside of the EHS building footprint used to assess potential groundwater impacts from AOC-11 include MW-47, MW-47I, MW-12, MW-71S, MW-71I and temporary monitoring wells B93 (analyzed for VOCs), B94 (analyzed for VOCs), B95 (analyzed for VOCs), B96 (analyzed for VOCs), and B29-A (analyzed for PCBs, SVOCs, and VOCs). PCBs and metals were reported below TOGS groundwater standards at these monitoring wells. VOCs were reported above TOGS groundwater standards at MW-47I. This portion of AOC-11 overlaps with AOC-13 (former metal cleaning, vapor degreaser and solvent still areas). MW-47I exceeded the TOGS groundwater standard for benzene (1.5 µg/L compared

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to TOGS of 1 µg/L) in September 2021. Benzene was observed as non-detect at MW-47I in samples collected in October 2021 and April 2024. TCE was observed above the TOGS groundwater standard (5 µg/L) at B92 (5.6 µg/L) and B94 (8.9 µg/L) in August 2014. TCE was detected below TOGS groundwater standards at MW-47 in September 2016 (3.9 µg/L) and non-detect in February 2021 and July 2021. TCE was non-detect at MW-47I in September 2021, October 2021, and April 2024. Therefore, further assessment is not warranted.

VOCS were reported downgradient of AOC-11 at MW-12. MW-12 exceeded the TOGS groundwater standard for cis-1,2 DCE (one exceedance, 9 µg/L), Freon 113 (maximum result 160 µg/L), and TCE (two exceedances, 9J and 6.8 µg/L) in samples collected between May 2000 and July 2007. These VOC compounds all were observed as non-detect in more recent samplings in February 2021 and July 2021. Therefore, further assessment is not warranted.

AOC-11 – Sub-Slab Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples SSHS-23-SS, SSHS-04-SS, and SSHS-05-SS were collected within proximity to AOC-11 underneath F-wing. VOCs were reported below NYSDOH Matrix Guidelines at SSHS-23-SS. VOCs were reported above NYSDOH Matrix Guidelines at SSHS-04-SS, and SSHS-05-SS. This portion of AOC-11 overlaps with AOC-13 (former metal cleaning, vapor degreaser and solvent still areas).

TCE was reported above NYSDOH Matrix Guidelines at SSHS-04-SS (390 µg/m^3) and SSHS-05-SS (2,100 µg/m^3). Based on the detections of TCE and cis-1,2-DCE, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. TCE was detected in the SSD system effluent for the F-Wing in November 2023 (339 µg/m^3), November 2024 (246 µg/m^3), and November 2025 (303 µg/m^3) as presented on **Figure 6V-1B**. TCE effluent concentrations decreased between June 2018 and July 2021, increased in December 2021, slightly decreased in November 2023, and then slightly increased in November 2024 and 2025. This indicates that TCE is still present in sub-slab vapor below F-Wing and may potentially be associated with AOC-11.

1,1,1-TCA and TCE were detected below the east side of the Gymnasium in 2009 (SV-GM EAST) at concentrations of 23,000 µg/m3 (**Figure 5V-2B**) and 28 µg/m3 (**Figure 5V-2A**), respectively. Per the recommendation of NYSDOH, ECSD installed a SSD System in the Gymnasium in 2010 as discussed in Section 3.1.2. Sub-slab vapor below the Gymnasium was not sampled by Unisys in 2014 and 2018 due to the presence of the vapor mitigation system. Sampling of the Gymnasium SSD effluent by Unisys detected 19 µg/m^3 of TCE in June 2018 (**Table 6-1B**), 3.4 µg/m^3 of TCE in November 2023, and 98.9 µg/m^3 of TCE in November 2025 (**Table 6-1C**). 1,1,1-TCA was not detected above the laboratory reporting limit. This suggests that TCE may be present in sub-slab vapor below the Gymnasium, but the continued presence of 1,1,1-TCA is unknown and may be associated with AOC-11.

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The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1, 5.2.2, and 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-11 Summary

AOC-11 includes areas previously identified to have VOC and petroleum impacted groundwater and includes multiple portions located within the FFC and underneath the EHS Building. Portions of AOC-11 located on the FFC and off-Site to the east were investigated for groundwater. PCBs and metals were reported below TOGS groundwater screening criteria. VOCs were reported above TOGS groundwater screening criteria at MW-11I. The downgradient extent of VOCs at this portion of AOC-11 is defined off-Site at MW-107S and MW-107I. Portions of AOC-11 located underneath the EHS Building have been assessed through groundwater data collected downgradient of the AOC, outside of the EHS building footprint. PCBs and metals were reported below TOGS groundwater screening criteria. VOCs were reported above TOGS groundwater screening criteria at MW-47I in September 2021 (benzene) and MW-12 (cis-1,2 DCE, Freon 113, and TCE), most recent exceedance in July 2007. These exceedances at MW-47I and MW-12 were not repeated in recent sampling events. Benzene was observed as non-detect in samples collected in October 2021 and April 2024 at MW-47I. VOCs were observed as non-detect at MW-12 in February 2021 and July 2021.

VOCs in sub-slab vapor were reported above NYSDOH Matrix Guidelines for TCE and cis-1,2-DCE in the vicinity of AOC-11. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS Building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and portions of AOC-11 located under the EHS Building are proposed to be managed under the Track 4 remedy.

5.2.22 AOC-12 (Plating, Heat Treatment and Tumbling Areas)

AOC-12 includes former plating, heating treatment, and tumbling areas. AOC-12 consists of three discrete sections located in separate areas of the Site, including the NAF (AOC-12-1), FFC (AOC-12-2), and EHS Building (AOC-12-3) (**Figure 1-4**). AOC-12-1 is located within former Building 49. AOC-12-2 is located within former Building 67 (**Figure 1-3**). AOC-12-3 is a former plating, heating treatment, and tumbling areas and located beneath the EHS Building (AOC-1). AOC-12-1 spatially overlaps with AOC-16-3 and AOC-17-9. AOC-12-2 spatially overlaps with AOC-3. AOC-12-3 spatially overlaps with AOC-9-2, AOC-10D-6, AOC-16-1, and AOC-17-4.

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Historical records identify industrial process and waste structures assumed to be open to underlying soils.

Potential releases of COPCs to underlying soil due to these historical structures have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-12 includes soil, groundwater, and soil vapor, and COPCs associated with the AOC-12 are PCBs, metals, SVOCs, and VOCs. Portions of AOC-12-3 extend outside the EHS building footprint and outside of the Revised BCP Site. Investigation findings and associated conclusions for the portions of AOC-12-3 that extend within New BCP Site #c808054 will be discussed in the #c808054 RI/AA.

Soil, groundwater, and soil vapor potentially associated with AOC-12 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. For each AOC-12 area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

5.2.22.1 AOC-12 – NAF (AOC-12-1)

AOC-12-1 is located in the NAF (**Figure 1-4**). Potential impacts to AOC-12-1 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-12-1 are shown compared to Restricted Residential SCO values on **Figures 5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Media of concern associated with AOC-12-1 includes soil and groundwater. COPCs associated with AOC-12-1 include PCBs, metals, SVOCs, and VOCs. Excavations within AOC-12-1 were completed up to 8 ft bgs as part of IRM #5A2, as discussed in Section 3.2.5.

AOC-12-1 Soil

Two soil borings, B3109 and B3336, were installed within AOC-12-1 to a maximum depth of 14 ft bgs. COPCs, including PCBs, metals, SVOCs, and VOCs, were not identified within AOC-12-1 above Restricted Residential SCOs.

AOC-12-1 Groundwater

Potential impacts of AOC-12-1 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells MW-100S and MW-100I are located downgradient of AOC-12-1. Groundwater samples collected as part of the RI investigation of AOC-12-1 were analyzed for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not reported above TOGS groundwater standards downgradient of AOC-12-1.

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AOC-12-1 Summary

AOC-12-1 is a former plating, heat treatment, and tumbling area within former Building 49 and is located on the NAF (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-12-1 and to evaluate potential migration pathways in accordance with RI objectives. Analytical results indicate that PCBs, metals, SVOCs, and VOCs were not detected in soil above Restricted Residential SCOs. PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-12-1.

Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-12-1, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-12-1 on the Revised BCP Site

5.2.22.2 AOC-12 – FFC (AOC-12-2)

AOC-12-2 is located in the FFC (**Figure 1-4**). Potential impacts to AOC-12-2 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-12-2 are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Media of concern associated with AOC-12-2 includes soil and groundwater. COPCs proposed for investigation of AOC-12-2 as part of the RI Work Plan (Geosyntec, 2019a) include PCBs, metals, SVOCs, and VOCs. Excavations within AOC-12-2 were completed up to 13 ft bgs as part of the FFC IRM, as discussed in Section 3.2.4.

AOC-12-2 Soil

A total of 11 soil borings were installed within AOC-12-2 to a maximum depth of 14 ft bgs across multiple soil sampling events (Section 2.2). Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. COPCs, including PCBs, metals, and SVOCs, were identified within AOC-12-2 above Restricted Residential SCOs. VOCs were not identified within AOC-12-2 above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were observed up to a depth of 6 ft bgs. Metals above the Restricted Residential SCOs, including barium, chromium, and copper, were observed up to a depth of 12 ft bgs. SVOCs above the Restricted Residential SCOs, including benzo(b)fluoranthene and indeno (1,2,3-cd)pyrene, were observed up to a depth of 2 ft bgs.

A summary of soil exceedances found within AOC-12-2 is provided below. Excavations within AOC-12-2 were completed up to 13 ft bgs as part of the FFC IRM. Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples which have been excavated are noted.

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PCBs

- The following soil boring sample within AOC-12-2 had PCBs detected above TSCA level (>= 50 mg/kg):
    - SSHS-B2346-SUB-2-4 (PS-FD-6: 99.6 mg/kg) – Excavated
- The following soil boring samples within AOC-12-2 had PCBs detected above the PoG SCO (>3.2 mg/kg):
    - SSHS-B2300-SUB-0.17-2 (3.8 mg/kg) – Excavated
    - SSHS-B2300-SUB-2-4 (6.589 mg/kg) – Excavated
    - SSHS-B2301-SUB-2-4 (4.33 mg/kg) – Excavated
    - SSHS-B2618-SUB-2-4 (PS-FD-18: 17.3 mg/kg) – Excavated
    - SSHS-B2618-SUB-4-6 (17.5 mg/kg) – Excavated
    - SSHS-B2618-SUB-0.17-2 (7.77 mg/kg) – Excavated
    - SSHS-B2625-SUB-2-4 (PS-FD-14: 5.62 mg/kg) – Excavated
    - SSHS-B2718-SUB-0.17-2 (4.21 mg/kg) – Excavated
    - SSHS-B2921-SUB-2-4 (13.8 mg/kg) – Excavated
    - SSHS-B2921-SUB-4-6 (5.56 mg/kg) – Excavated
    - SSHS-B423-SUB-0-2 (10.1 mg/kg) – Excavated
    - SSHS-B425-SUB-2-4 (10.11 mg/kg) – Excavated
- The following soil boring samples within AOC-12-2 had PCBs detected above the Restricted Residential SCO (>1 mg/kg):
    - SSHS-B2221-SUB-4-6 (1.874 mg/kg) – Excavated
    - SSHS-B425-SUB-0-2 (1.097 mg/kg) – Excavated

Metals

- Barium – One sample (SSHS-B2780-SUB-4-6) had barium detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (>820 mg/kg), from 4-6 ft bgs at 450 mg/kg. No samples within AOC-12-2 had barium detected above the PoG SCO (>820 mg/kg). This sample was excavated during the FFC IRM.
- Chromium – A total of five samples within AOC-12-2 had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg) from 2-12 ft bgs, with concentrations ranging from 180 to 1,100 mg/kg. A total of 11 samples within AOC-12-2 had chromium detected above the PoG SCO (>19 mg/kg), but not the Restricted Residential SCO (>110 mg/kg), from 0-14 ft bgs, with concentrations ranging from 20 to 92 mg/kg. 13 of the 16 samples were excavated during the FFC IRM. SSHS-B2221-SUB-12-14 remains in place at 92 mg/kg. SSHS-B2618-SUB-8-10 remains in place at 38 mg/kg. SSHS-B2618-SUB-10-12 remains in place at 32 mg/kg.

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- Copper – A total of 10 samples within AOC-12-2 had copper detected above the Restricted Residential SCO (>270 mg/kg), but not the PoG SCO (>1,720 mg/kg), from 2-12 ft bgs, with concentrations ranging from 280 to 1,400 mg/kg. Two samples (SSHS-B2221-SUB-2-4 and SSHS-B2221-SUB-4-6) within AOC-12-2 had copper detected above the PoG SCO (>1,720 mg/kg) from 2-6 ft bgs, with concentrations ranging from 2,100 to 3,600 mg/kg. Ten of the 12 samples were excavated during the FFC IRM. SSHS-B2618-SUB-8-10 remains in place at 360 mg/kg. SSHS-B2618-SUB-10-12 remains in place at 280 mg/kg.

SVOCs

- Benzo(b)fluoranthene – One sample (SSHS-B2718-SUB-0.17-2) within AOC-12-2 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg), but not the PoG SCO (>1.7 mg/kg), from 0.17-2 ft bgs at 1.1 mg/kg. The sample was excavated during the FFC IRM.
- Indeno(1,2,3-cd)pyrene – One sample (SSHS-B2718-SUB-0.17-2) within AOC-12-2 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg), but not the PoG SCO (>8.2 mg/kg), from 0.17-2 ft bgs at 0.61 mg/kg. The sample was excavated during the FFC IRM.

AOC-12-2 Groundwater

Potential impacts of AOC-12-2 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Temporary monitoring well B2221 was installed within AOC-12-2 and analyzed for metals. Temporary monitoring wells B3877S and B3877I were installed downgradient of AOC-12-2 and analyzed for PCBs, metals, and SVOCs. Monitoring well MW-44 is located downgradient of AOC-12-2 and was analyzed for PCBs, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs and SVOCs were not reported above TOGS groundwater standards within or downgradient of AOC-12-2. Metals were reported above the TOGS groundwater standard for chromium (210 µg/L) at B2221 in May 2019. Chromium was not reported above TOGS groundwater standards downgradient of temporary monitoring well B2221 at B3877I, B3877S, and MW-44. TCE was reported above the TOGS groundwater standard for (8.1 µg/L) at B3877S sample in April 2021. TCE was reported below the TOGS groundwater standard downgradient of B3877S at MW-20 in July 2021, located off-Site. As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of TCE exceedances in the downgradient permanent monitoring well is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. Therefore, additional investigation is not warranted.

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AOC-12-2 Summary

AOC-12-2 is a former plating, heating treatment, and tumbling area within former Building 67 in the FFC (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The data collected are sufficient to evaluate the nature and extent of AOC-12-2 and to evaluate potential migration pathways in accordance with RI objectives.

Analytical results indicate that PCBs, SVOCS, and metals were detected in soil above applicable SCOs up to depths of 12 ft bgs. VOCs were not identified above applicable SCOs. Soils exceeding applicable SCOs are not confined to AOC-12-2 and extend beyond the limits of the AOC. COPCs identified in soil within AOC-12-2 which may have been related to this historic feature have been removed by FFC IRM excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

PCBs and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-12-2. Chromium was observed above the TOGS groundwater standard at B2221 collected within AOC-12-2 but was not observed downgradient. TCE was reported above the TOGS groundwater standard for TCE (8.1 µg/L) at B3877S located downgradient of AOC-12-2. TCE was not detected above the TOGS groundwater standard downgradient of B3877S and AOC-12-2 at MW-20, located off-Site.

Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-12-2, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further evaluation is warranted to define the nature and extent of impacts in soil and groundwater for AOC-12-2 on the Revised BCP Site.

5.2.22.3 AOC-12 – EHS Building (AOC-12-3)

AOC-12-3 is characterized as a former plating, heating treatment, and tumbling area and located beneath the EHS Building (AOC-1). AOC-12-3 partly underlies the EHS building on Site #c808022 but mostly lies outside to the west of the building on Site #c808054 and is overlapped by AOC-1A, AOC-1B, AOC-9, AOC-10D-6, AOC-16-1, and AOC-17-4 (**Figure 1-4**). Potential releases of COPCs in underlying soil due to historical operations have been investigated at this AOC. AOC-12-3 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected within AOC-12-3, and groundwater data collected within and downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**. The media of concern associated with AOC-12 as per the 2019 RI Work Plan included soil; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through groundwater and sub-slab vapor sampling. COPCs associated with AOC-12-3 are PCBs, metals, SVOCs, and VOCs.

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AOC-12-3 Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-12-3 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

Investigation findings and associated conclusions for the portions of AOC-12-3 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

AOC-12-3 Groundwater

Potential impacts of AOC-12-3 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells MW-90S, MW-90I, MW-91S, and MW-91I were installed downgradient of AOC-12-3 and analyzed for PCBs, metals, SVOCs, and VOCs. Temporary monitoring well B3203A was installed within AOC-12-3 and was analyzed for PCBs, metals, SVOCs and VOCs. Temporary monitoring wells B97 and B3203B were installed within AOC-12-3 and analyzed for VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, SVOCs, and VOCs were not observed above TOGS groundwater standards within or downgradient of AOC-12-3.

AOC-12-3 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** and screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor samples were collected within AOC-12-3 at SS-122, SS-06-SS, SS-120 and SS-07-SS and were observed below NYSDOH Matrix Guidelines. See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

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AOC-12-3 Summary

AOC-12-3 is a former plating, heating treatment, and tumbling area. AOC12-3 is located underneath the EHS building but mostly lies outside to the west of the building on Site #c808054. Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected downgradient of AOC-12-3 outside of the EHS building footprint.

PCBs, metals, VOCs, and SVOCs were not detected in groundwater above TOGS standards within or downgradient of AOC-12-3. VOCs were reported below NYSDOH guidelines in sub-slab vapor samples collected within AOC-12-3.

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-12-3 located under the EHS Building is proposed to be managed under the Track 4 remedy.

Investigation findings and associated conclusions for the portions of AOC-12-3 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

5.2.23 AOC-13 (Metals Cleaning, Vapor Degreaser and Solvent Still)

AOC-13 is a former metal cleaning, vapor degreaser and solvent still area. AOC-13 partly underlies the EHS Building (AOC-1) but mostly lies outside to the north of the EHS building within the New BCP Site (**Figure 1-4**). AOC-13 spatially overlaps with AOC-11, AOC-16-1 and AOC-17-4. TCE impacts above SCOs in soil and groundwater were documented at this AOC during the Site Characterization. Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. The media of concern associated with AOC-13 as per the 2019 RI Work Plan included soil; however, due to physical constraints of sampling beneath the EHS building, this AOC was further evaluated through groundwater and sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with AOC-13 are PCBs, metals, SVOCs, and VOCs. Soil, groundwater, and soil vapor potentially associated with AOC-13 have been sufficiently investigated to the extent practicable to achieve the RI objectives provided in Section 1.5. Investigation findings and associated conclusions for the portions of AOC-13 that extend within New BCP Site #c808054 will be discussed in the #c808054 RI/AA

AOC-13 Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally,

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indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-13 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

Investigation findings and associated conclusions for the portions of AOC-13 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

AOC-13 Groundwater

Potential impacts of AOC-13 on groundwater quality were evaluated using samples collected from monitoring wells located downgradient of the AOC. Monitoring wells installed downgradient of AOC-13 include MW-47 and MW-47I. Temporary monitoring wells installed downgradient of AOC-13 include B92 and B94. Temporary monitoring wells B93 and B95 were installed within AOC-13. MW-47 and MW-47I were analyzed for PCBs, metals, SVOCs, and VOCs. Temporary monitoring wells B92, B93, B95, and B94 were analyzed for VOCs. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, and SVOCS were observed below TOGS groundwater standards.

VOCs

MW-47I located downgradient of AOC-13 exceeded the TOGS groundwater standard for benzene (1.5 µg/L compared to TOGS of 1 µg/L) in September 2021. Benzene was observed as non-detect at MW-47I in samples collected in October 2021 and April 2024. Therefore, further investigation is not warranted. TCE was observed above the TOGS groundwater standard (5 µg/L) at B92 (5.6 µg/L) and B94 (8.9 µg/L) in August 2014, downgradient of AOC-13. TCE was detected below TOGS groundwater standards at adjacent monitoring well MW-47 in September 2016 (3.9 µg/L) and non-detect in February 2021 and July 2021. TCE was non-detect at MW-47I in September 2021, October 2021, and April 2024. VOCs were not reported above TOGS for temporary monitoring wells installed within AOC-13 (B93 and B95). As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of TCE exceedances in the adjacent permanent monitoring wells is considered more representative of actual aquifer

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conditions than the isolated exceedances reported in temporary monitoring well samples. Therefore, additional investigation is not warranted.

AOC-13 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor sample SSHS-04-SS and SSHS-05-SS were within AOC-13. TCE was reported above NYSDOH Matrix Guidelines at SSHS-04-SS (390 µg/m^3) and SSHS-05-SS (2,100 µg/m^3). Based on the detections of TCE, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. TCE was detected in the SSD system effluent for the F-Wing in November 2023 (339 µg/m^3), November 2024 (246 µg/m^3), and November 2025 (303 µg/m^3) as presented on **Figure 6V-1B**. TCE effluent concentrations decreased between June 2018 and July 2021, increased in December 2021, slightly decreased in November 2023, and then slightly increased in November 2024 and 2025. This indicates that TCE is still present in sub-slab vapor below F-Wing and may potentially be associated with AOC-13.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-13 Summary

AOC-13 is a former metal cleaning, vapor degreaser and solvent still area. This AOC partly underlies the EHS building but mostly lies outside to the north of the EHS building within the New BCP Site (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected within AOC-13, and groundwater data collected within and downgradient of AOC-13, outside of the EHS building footprint.

PCBs, metals, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-13. Benzene was reported above TOGS groundwater standards at MW-47I but was not repeated. TCE was observed above TOGS groundwater standards at temporary monitoring wells B92 and B94 but not observed above TOGS groundwater standards at downgradient monitoring wells MW-47 and MW-47I.

VOCs in sub-slab vapor were reported above NYSDOH Matrix Guidelines for TCE within AOC-13. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS Building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

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Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-13 located under the EHS Building is proposed to be managed under the Track 4 remedy.

Investigation findings and associated conclusions for the portions of AOC-13 located outside of the Revised BCP Site will be documented under the RI for the New BCP Site.

5.2.24 AOC-14 (Power Washer, Rust Prevention Dip Operation)

AOC-14 is former power washer, rust prevention and dip operations areas and includes four discrete areas. AOC-14-3 is located in the Tennis Courts and Main Parking Lot area (**Figure 1-4**). AOC-14-3 spatially overlaps with AOC-16-3. AOC-14-2 and AOC-14-4 are located within the New BCP Site and will be discussed in the #c808054 RI/AA. AOC-14-1 is located to the south of the Site and will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049).

Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-14 includes soil and groundwater, and COPCs associated with AOC-14-3 are SVOCs and metals.

No soil borings were proposed under the 2019 RI Work Plan to investigate AOC-14-3, as this AOC was previously addressed as part of IRM #1 and the FFC IRM. This area was previously characterized by pre-RI soil data collected as part of the Site Characterization. Soil data is discussed below for completeness.

Soil borings collected as part of the investigation of AOC-14-3 in the Main Parking Lot and Tennis Courts area are shown compared to Restricted Residential SCO values on **Figures 5-10A-G** (0-14 ft bgs). Groundwater samples collected in the Main Parking Lot and Tennis Courts area are shown compared to TOGS groundwater standards on **Figures 5-11A-1** through **5-11D-2**. Excavations within AOC-14-3 were completed up to 4 ft bgs as part of the FFC IRM as discussed in Section 3.2.4.

SVOCs were detected in the vicinity of AOC-14-3 above Restricted Residential SCOs but are shallow (0.17-2 ft bgs) and attributable to asphalt pavement. Metals were not detected above Restricted Residential SCOs in the vicinity of AOC-14-3. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary and are discussed in Section 6. SVOCs above applicable SCOs in the vicinity of AOC-14-3 have been delineated vertically. Metals and SVOCs were not detected above TOGS groundwater standards downgradient of AOC-14-3. A summary is presented below, including investigations completed, analytical results, and findings.

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AOC-14-3 Soil

One soil boring, B84, was advanced up-gradient of AOC-14-3 from 0-14 ft bgs and analyzed for SVOCs and metals as shown on **Figures 5-10A-G**. Metals were not detected above Restricted Residential SCOs. Indeno(1,2,3-cd)pyrene was detected (0.64 mg/kg) above the Restricted Residential SCO (>0.5 mg/kg), but below the PoG SCO (>8.2 mg/kg) at SSHS-B84-0.17-2 from 0.17-2 ft bgs. PAHs in shallow soil samples are likely attributable to asphalt pavement rather than historical operations associated with AOC-14-3, as these exceedances are limited to shallow intervals immediately beneath the asphalt pavement and are not detected at other depths.

AOC-14-3 Groundwater

Potential impacts of AOC-14-3 on groundwater quality were evaluated using samples collected from monitoring wells located in proximity to and downgradient of the AOC. Monitoring wells MW-92S and MW-92I were installed in proximity to AOC-14-3. Monitoring well MW-39 is located downgradient of AOC-14-3. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-11A-1** through **5-11D-2**. Groundwater analytical results are presented in **Tables 5-9** and **5-10** for metals and SVOCs, respectively, and are compared to TOGS groundwater standards. Metals and SVOCs were not detected above TOGS groundwater standards adjacent to and downgradient of AOC-14-3.

AOC-14-3 Summary

AOC-14-3 is a former power washer, rust prevention and dip operations area located in the Tennis Court and Main Parking Lot area (**Figure 1-4**). No soil borings were proposed under the 2019 RI Work Plan to investigate AOC-14-3, as this AOC was previously addressed as part of IRM #1. This area was previously characterized by pre-RI soil data collected as part of the Site Characterization. Analytical results indicate that SVOCs and metals were not detected in soil above Restricted Residential SCOs near AOC-14-3, with the exception of a shallow Restricted Residential SCO exceedance at B84 from 0.17-2 ft bgs which is likely attributable to asphalt pavement rather than historical operations associated with AOC-14-3. Metals and SVOCs were not detected above TOGS groundwater standards adjacent to and downgradient of AOC-14-3.

5.2.25 AOC-15 (Wire Pickling Area)

AOC-15 is former wire pickling areas and includes two discrete areas located in separate areas of the Site. AOC-15-2 is located within the FFC and beneath the EHS Building (AOC-1) (**Figure 1-4**). AOC-15-2 spatially overlaps with AOC-3, AOC-6-3, AOC-10D-4, and AOC-11. AOC-15-1 is located to the south of the Site and will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049). AOC-15-2 primarily underlies the EHS Building but extends outside of the EHS Building to the east and west. The area to the west of EHS is located off-Site on Site #c808054. Investigation findings and associated conclusions for the portions of AOC-15-2 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern associated with AOC-15 included soil and groundwater, and COPCs included SVOCs and metals.

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Portions of AOC-15-2 located outside of the EHS Building in the FFC were evaluated through soil investigations. Soil borings collected as part of the RI investigation of AOC-15-2 are shown compared to Restricted Residential SCOs on **Figures 5-7A-H** (0-16 ft bgs) and **Figure 5-9A-P** (16-48 ft bgs). Excavations completed within the portions of AOC-15-2 located outside of the EHS Building were completed up to 12 ft bgs as part of the FFC IRM.

It was determined that the physical constraints of the EHS Building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. Therefore, AOC-15 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected within AOC-15 and groundwater data collected within and downgradient of the AOC, outside of the EHS Building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**.

AOC-15-2 Soil

A total of three soil borings were installed within AOC-15-2 to a maximum depth of 42 ft bgs. Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. Two borings (B2747 and B2767) were sampled for metals. One boring (B4016) was sampled for metals and SVOCs. Metals were detected within AOC-15-2 above Restricted Residential SCOs up to a depth of 4 ft bgs. SVOCs were not detected within AOC-15-2 above Restricted Residential SCOs.

A summary of soil exceedances found within AOC-15-2 is provided below. Excavations within AOC-15-2 were completed up to 12 ft bgs as part of the FFC IRM. Samples which have been excavated are noted.

Metals

- Chromium (III+VI) – No samples within AOC-15-2 had chromium detected above the Restricted Residential SCO (>110 mg/kg). One sample (SSHS-B4016-SUB-40-42) within AOC-15-2 had chromium detected above the PoG SCO (>19 mg/kg), but below the Restricted Residential SCO (>110 mg/kg), from 40-42 ft bgs at 20 mg/kg. This SCO exceedance remains in place.
- Lead – One sample (SSHS-B2767-SUB-2-4 at PS-FD-3) within AOC-15-2 had lead detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (>450 mg/kg) from 2-4 ft bgs at 3,800 mg/kg. This sample was excavated during the FFC IRM.

Portions of AOC-15-2 are located under the EHS Building. It was determined that the physical constraints of the EHS Building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS Building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the

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portions of AOC-15-2 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil.

The nature and extent of COPCs remaining in place in the FFC, including portions of AOC-15-2, is presented in Section 6.3.2. The nature and extent discussed in Section 6.3.2 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-15-2. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-15-2 have been delineated vertically.

AOC-15-2 Groundwater

Potential impacts of AOC-15-2 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells MW-13 and MW-85I were installed within AOC-15-2 within the portion of the AOC that extends to the east of the EHS Building onto the New BCP Site. MW-104I and MW-104S were installed adjacent to AOC-15-2 to the west of the EHS Building. MW-33 was installed off-Site and downgradient of the AOC. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Groundwater analytical results are presented in **Tables 5-9** and **5-10** for metals and SVOCs, respectively, and are compared to TOGS groundwater standards. Metals were not detected above TOGS groundwater standards at these locations. SVOCs, including benz(a)anthracene and chrysene, were detected above TOGS groundwater standards at MW-104S in September 2023. SVOCs were detected below TOGS groundwater standards at MW-104S in April 2024. As further discussed in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent; therefore, additional investigation is not warranted.

AOC-15-2 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab soil vapor sample SSHS-23-SS and SS-164 were within AOC-15-2. There were no exceedances at either sampling location.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in sub-slab vapor and indoor air is discussed in Section 6.1.

AOC-15-2 Summary

AOC-15-2 is a former wire pickling area. AOC-15-2 primarily underlies the EHS Building but extends outside of the EHS Building to the east and west (**Figure 1-4**). This AOC was investigated

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through the collection of soil and groundwater samples targeting potential releases of COPCs, including metals and SVOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-15-2 and to evaluate potential migration pathways in accordance with RI objectives.

For the portions of AOC-15-2 located outside of the EHS Building, metals were identified above Restricted Residential SCOs up to a depth of 4 ft bgs. SVOCs were not identified within AOC-15-2 above Restricted Residential SCOs. Excavations within the portions of AOC-15-2 located outside of the EHS Building were completed up to 12 ft bgs as part of the FFC IRM. Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-15-2, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further evaluation is warranted to define the nature and extent of impacts in soil for AOC-15-2 on the Revised BCP Site.

Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using groundwater data collected adjacent downgradient of AOC-15-2, outside of the EHS Building footprint.

Metals were not detected above TOGS groundwater standards within or downgradient of AOC-15-2. SVOCs were detected above TOGS groundwater standards adjacent to AOC-15-2. SVOC detections were sporadic and not reproduced during subsequent sampling events; therefore, further assessment is not warranted. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

AOC-15-1 is located to the south of the Site and will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049).

5.2.26 AOC-16 (Machine Shop Area)

AOC-16 is the former machine shop area. AOC-16 consists of five discrete sections, four of which are located within the Revised BCP Site (**Figure 1-4**). AOC-16-3 is located across the NAF, FFC, and Tennis Court and Main Parking Lot Area. AOC-16-4 and AOC-16-5 are located within the FFC. AOC-16-1 is located underneath the EHS Building (AOC-1) and extends to the west onto the New BCP Site.

Multiple AOCs spatially overlap AOC-16 within the Revised BCP Site.

- AOC-16-1: spatially overlaps with AOC-2, AOC-3, AOC-9-2, AOC-10D-6, AOC-11, AOC-12-3, AOC-13, AOC-17-4
- AOC-16-3: spatially overlaps with AOC-6-1, AOC-10A-6, AOC-10B-1, AOC-11, AOC-12-1, AOC-14-3, AOC-17-9, and AOC-19
- AOC-16-4: spatially overlaps with AOC-10C-1.
- AOC-16-5: spatially overlaps with AOC-11, AOC-10B-2, AOC-10C-5

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Investigation findings and associated conclusions for the portion of AOC-16-1 that extends onto the New BCP Site will be discussed in the #c808054 RI/AA. AOC-16-2 is located to the South of the Revised BCP Site on Site #p808049. AOC-16-2 will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049).

Potential releases of COPCs to underlying soil due to historical operations have been investigated at this AOC. Media of concern associated with AOC-16 includes soil and groundwater as per the 2019 RI Work Plan. Due to physical constraints of sampling beneath the EHS building, AOC-16-1 was further evaluated through sub-slab vapor sampling. As per the 2019 RI Work Plan (Geosyntec, 2019a), COPCs associated with the AOC-16 are PCBs, metals, SVOCs, and VOCs.

Soil and groundwater potentially associated with the AOC-16 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. For each AOC-16 area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

5.2.26.1 AOC-16-3

AOC-16-3 is located across the NAF, FFC, Tennis Court and Main Parking Lot Area (**Figure 1-4**). Potential impacts to AOC-16-3 have been investigated through collection of soil and groundwater samples. As AOC-16-3 is located in three separate Site areas, multiple AOCs overlap or are located within this AOC.

- Located within AOC-16-3: AOC-12-1, AOC-10A-6, AOC-10B-1, AOC-6-1, AOC-14-3
- Overlap with AOC-3, AOC-16-3: AOC-19, AOC-11, and AOC-17-9

Soil borings collected as part of the RI investigation of AOC-16-3 on the NAF are shown compared to Restricted Residential SCO values on **Figures 5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples collected on the NAF are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**.

Soil borings collected as part of the RI investigation of AOC-16-3 portions on the FFC are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples collected on the FFC are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**.

Soil borings collected as part of the RI investigation of AOC-16-3 in the Main Parking Lot and Tennis Courts area are shown compared to Restricted Residential SCO values on **Figures 5-10A-H** (0-16 ft bgs) and **5-12A-B** (16-20 ft bgs). Groundwater samples collected in the Main Parking Lot and Tennis Courts area are shown compared to TOGS groundwater standards on **Figures 5-11A-1** through **5-11D-2**.

<u>AOC-16-3 Soil</u>

A total of 395 soil borings were installed within AOC-16-3 to a maximum depth of 36 ft bgs. Within the FFC and NAF, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature

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and extent of COPCs observed above Restricted Residential SCOs. Portions of AOC-16-3 located within the Tennis Courts and Main Parking Lot area were previously characterized during the Site Characterization. PCBs, metals, and SVOCS were detected above Restricted Residential SCOs. VOCS were not detected above Restricted Residential SCOs. A summary of TSCA, Restricted Residential SCO, and PoG SCO exceedances found within AOC-16-3 is provided below; however, a high-level summary is provided below by each respective COPC and SCO exceedance. Excavations within AOC-16-3 were completed up to 16 ft bgs (approximate depth to water table) as part of the FFC IRM and IRM #5A2. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples which have been excavated are noted.

PCBs

154 samples within AOC-16-3 were detected above the Restricted Residential SCO (>1 mg/kg) up to 32 ft bgs. Due to the size of AOC-16-3 and number of exceedances, a detailed list of each sample is not provided in the text. A total of 103 of the 154 Restricted Residential SCO exceedances were excavated as part of the various IRMs completed encompassing AOC-16-3. The maximum concentration of PCBs detected within AOC-16-3 was 13,000 mg/kg at SSHS-B3454-SUB-22-24. This sample remains in place below the water table. B3454 is also located within AOC-19 where elevated PCB concentration are more likely attributable to that AOC (Section 5.2.29).

PCBs

- A total of 25 soil boring samples collected within AOC-16-3 had PCBs detected above TSCA level (>=50 mg/kg). Concentrations ranged from 53 to 13,000 mg/kg from 2-30 ft bgs. 14 of the 25 TSCA level exceedances were excavated as part of either the FFC IRMs or IRM #5A2. Samples remaining in place above TSCA level are between 14-30 ft bgs (at or below the water table) and were not removed due to technical impracticability for removal as further discussed in Section 6.

- A total of 53 soil boring samples collected within AOC-16-3 had PCBs detected above the PoG SCO (>3.2 mg/kg) but below TSCA levels (>=50 mg/kg). Concentrations ranged from 3.23 to 44 mg/kg from 0-32 ft bgs. 39 of the 53 PoG SCO exceedances were excavated as part of the IRM #1, FFC IRMs, or IRM #5A2. Samples remaining in place above the PoG SCO are between 8-32 ft bgs and are further discussed in Section 6.

- A total of 76 soil boring samples collected within AOC-16-3 had PCBs above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>3.2 mg/kg). Concentrations ranged from 1.01 to 2.988 mg/kg from 0-24 ft bgs. 50 of the 76 Restricted Residential exceedances were excavated as part of IRM #1, FFC IRMs, or IRM #5A2. One sample remains in place (SSHS-B3472-SUB-0.17-2) within 0.17-2 ft bgs at a concentration of 1.78 mg/kg. This sample is located on the western side of the FFC, below a concrete sidewalk. Samples remaining in place above the Restricted Residential SCO are between 0.17-24 ft bgs and are further discussed in Section 6.

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Metals

- Arsenic – Four samples (SSHS-B2030-SUB-2-4, SSHS-B2050-SUB-6-8, SSHS-B2128-SUB-10-12, and SSHS-B3458-SUB-2-4[DUP10]) had arsenic detected above the Restricted Residential SCO (>16 mg/kg), and the PoG SCO (> 16 mg/kg), from 2-12 ft bgs, with concentration ranging from 17 to 87 mg/kg, respectively. SSHS-B3458-SUB-2-4[DUP10] was excavated during the IRM #5A2. SSHS-B2030-SUB-2-4 remains in place at 87 mg/kg. SSHS-B2050-SUB-6-8 remains in place at 17 mg/kg. SSHS-B2128-SUB-10-12 remains in place at 25 mg/kg.

- Barium – Two samples (SSHS-B3065-SUB-4-6 and SSHS-B3032-SUB-12-14) had barium detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (> 820 mg/kg), from 4-14 ft bgs with concentrations ranging from 570 to 800 mg/kg, respectively. SSHS-B3065-SUB-4-6 remains in place at 800 mg/kg. SSHS-B3032-SUB-12-14 remains in place at 570 mg/kg.

- Cadmium – One sample (SSHS-B3077-SUB-2-4) had cadmium detected above the Restricted Residential SCO (>4.3 mg/kg) and PoG SCO (7.5 mg/kg) from 2-4 ft bgs at 34 mg/kg. This sample was excavated during IRM #5A2.

- Chromium – One sample (SSHS-B3319-SUB-2-4) had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg) from 2-4 ft bgs at 300 mg/kg. This sample was excavated during IRM #5A2. A total of 65 samples within AOC-16-3 had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) but below the Restricted Residential SCO (>110 mg/kg) from 0-16 and 22-32 ft bgs with concentrations ranging from 20 to 91.4 mg/kg; however, one sample (SSHS-B3520-SUB-2-4) was analyzed for hexavalent chromium and had a detection of 0.26 mg/kg. 50 of the 65 samples were excavated during the FFC IRMs or IRM #5A2.

- Copper – Four samples (SSHS-B2189-SUB-6-8, SSHS-B3319-SUB-2-4, SSHS-B3475-SUB-2-4 and SSHS-B3520-SUB-2-4) had copper detected above the Restricted Residential SCO (>270 mg/kg) from 2-8 ft bgs. Concentrations ranged from 350 to 690 mg/kg. No samples had copper detected above the PoG SCO (>1,720 mg/kg). SSHS-B3319-SUB-2-4 and SSHS-B3520-SUB-2-4 were excavated during the IRM #5A2. SSHS-B2189-SUB-6-8 remains in place at 560 mg/kg. SSHS-B3475-SUB-2-4 remains in place at 690 mg/kg.

- Lead – One sample (SSHS-B3113-SUB-4-6) had lead detected above the Restricted Residential SCO (>400 mg/kg) but below PoG SCO (>450 mg/kg) from 4-6 ft bgs at 440 mg/kg. This sample remains in place. Three samples (SSHS-B2188-SUB-6-8, SSHS-B2188-SUB-0-2, and SSHS-B3323-SUB-2-4) had lead detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (>450 mg/kg) from 0-8 ft bgs with concentrations ranging from 480 to 590 mg/kg. SSHS-B2188-SUB-0-2 and SSHS-B3323-SUB-2-4 were excavated during IRM #5A2. SSHS-B2188-SUB-6-8 remains in place at 480 mg/kg.

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- Mercury – A total of 20 samples had mercury detected above the Restricted Residential SCO (>0.81 mg/kg) and PoG SCO (>0.73 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 0.84 to 15 mg/kg. 19 of the 20 were excavated during the FFC IRM or IRM #5A2. SSHS-B3078-SUB-2-4 remains in place 0.85 mg/kg. Three samples (SSHS-B2024-SUB-0.17-2, SSHS-B2705-SUB-0.17-2, and SSHS-B3633-SUB-2-4) were detected above the PoG SCO (>0.73 mg/kg) but below the Restricted Residential SCO (>0.81 mg/kg) from 0.17-4 with concentrations ranging from 0.77 to 0.81 mg/kg. All three samples were excavated during IRM #5A2.
- Nickel – One sample (SSHS-B2213-SUB-8-10) had nickel detected above the Restricted Residential SCO (>310 mg/kg) and PoG SCO (>130 mg/kg) from 8-10 ft bgs at 920 mg/kg. This sample remains in place. Two samples (SSHS-B2213-SUB-10-12, and SSHS-B3047-SUB-6-8) were detected above the PoG SCO (>130 mg/kg) but not the Restricted Residential SCO (>310 mg/kg) from 6-12 ft bgs. SSHS-B3047-SUB-6-8 remains in place at 250 mg/kg. SSHS-B2213-SUB-10-12 remains in place at 180 mg/kg.
- Zinc - One sample (SSHS-B3077-SUB-2-4) had zinc detected above the Restricted Residential SCO (>10,000 mg/kg) and PoG SCO (>2,480 mg/kg) from 2-4 ft bgs at 12,000 mg/kg. This sample was excavated during IRM #5A2.

SVOCs

- Benz(a)anthracene – A total of 39 samples had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0.17-20 ft bgs with concentrations ranging from 1.1 to 140 mg/kg. 28 of these 39 samples were excavated. Samples with benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) remain in place from 0.17-20 ft bgs ranging in concentrations from 1.1 to 140 mg/kg. The highest concentration of benz(a)anthracene remaining in place is at SSHS-B4164-SUB-2-4 (140 mg/kg) which is located beneath hardscape from 2-4 ft bgs.
- Benzo(a)pyrene – A total of 33 samples had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>22 mg/kg) from 0.17-20 ft bgs with concentrations ranging from 1.1 to 12 mg/kg. Three samples (SSHS-B3073A-SUB-4-6, SSHS-B3286-SUB-0.17-2, SSHS-B4164-SUB-2-4) had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) and the PoG SCO (>22 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 45 to 76 mg/kg. 26 of the 36 samples were excavated. Nine samples with concentrations of benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>22 mg/kg) remain in place from 0.17-20 ft bgs with concentrations ranging from 1.1 to 2 mg/kg. The highest concentration of benzo(a)pyrene remaining in place is at SSHS-B4164-SUB-2-4 (76 mg/kg) which is located beneath hardscape from 2-4 ft bgs.
- Benzo(b)fluoranthene – A total of 23 samples had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>1.7 mg/kg) from 0.17-16 ft bgs with concentrations ranging from 1.1 to 1.7 mg/kg. A total of 26 samples had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and

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the PoG SCO (>1.7 mg/kg) from 0.17-20 ft bgs, ranging from 1.9 to 100 mg/kg. 39 of these 49 samples were excavated. Four samples with concentrations of benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>1.7 mg/kg) remain in place from 0.17-16 ft bgs ranging in concentrations from 1.3 to 1.4 mg/kg. Six samples with concentrations of benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and the PoG SCO (>1.7 mg/kg) remain in place from 0.17-20 ft bgs ranging in concentrations from 2 to 100 mg/kg. The highest concentration of benzo(b)fluoranthene remaining in place is at SSHS-B4164-SUB-2-4 (100 mg/kg) which is located beneath hardscape from 2-4 ft bgs.

- Benzo(k)fluoranthene – A total of six samples had benzo(k)fluoranthene detected above the Restricted Residential SCO (>3.9 mg/kg) and PoG SCO (>1.7 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 4.6 to 33 mg/kg. Five of the six samples were excavated. A total of five samples had benzo(k)fluoranthene detected above the PoG SCO (>1.7 mg/kg) but not the Restricted Residential SCO (>3.9 mg/kg) from 0.5-6 ft bgs with concentrations ranging from 2 to 3.9 mg/kg. All five samples were excavated. The highest concentration of benzo(k)fluoranthene remaining in place is at SSHS-B4164-SUB-2-4 (33 mg/kg) which is located beneath hardscape from 2-4 ft bgs.

- Chrysene – A total of 28 samples had chrysene detected above the PoG SCO (>1 mg/kg) but below the Restricted Residential SCO (>3.9 mg/kg) from 0.17-20 ft bgs with concentrations ranging from 1.1 to 2.9 mg/kg. A total of 13 samples had chrysene detected above the PoG SCO (>1 mg/kg) and the Restricted Residential SCO (>3.9 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 4 to 120 mg/kg. 30 of the 41 samples were excavated. 10 samples with concentrations of chrysene detected above the PoG SCO (>1 mg/kg) but below the Restricted Residential SCO (>3.9 mg/kg) remain in place from 0.17-20 ft bgs. Concentrations for samples remaining in place range from 1.1 to 2.9 mg/kg. One sample (SSHS-B4164-SUB-2-4) had chrysene detected above the PoG SCO (>1 mg/kg) and the Restricted Residential SCO (>3.9 mg/kg) and remains in place from 2-4 ft bgs. The concentration for this sample is 120 mg/kg and is located beneath hardscape.

- Dibenz(a,h)anthracene – A total of 25 samples had dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg) from 0.17-20 ft bgs with concentrations ranging from 0.35 to 16 mg/kg. No samples had dibenz(a,h)anthracene detected above the PoG SCO (>1,000 mg/kg). 20 of these 25 samples were excavated. Samples with concentrations of dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg) remain in place from 0.17-20 ft bgs ranging from 0.39 to 16 mg/kg. The highest concentration of dibenz(a,h)anthracene remaining in place is at SSHS-B4164-SUB-2-4 at 16 mg/kg which is located beneath hardscape from 2-4 ft bgs.

- Fluoranthene – Three samples (SSHS-B3073A-SUB-4-6, SSHS-B3286-SUB-0.17-2, SSHS-B4164-SUB-2-4) had fluoranthene detected above the Restricted Residential SCO (>100 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 110 to 260 mg/kg. No samples had fluoranthene detected above the PoG SCO (>1,000 mg/kg). SSHS-B3073A-SUB-4-6 and SSHS-B3286-SUB-0.17-2 were excavated. SSHS-B4164-SUB-2-4 remains in place at 260 mg/kg which is located beneath hardscape from 2-4 ft bgs.

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- Indeno(1,2,3-cd)pyrene – A total of 60 samples had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) but below the PoG SCO (>8.2 mg/kg) from 0.17-20 ft bgs with concentrations ranging from 0.51 to 8.1 mg/kg. 46 of the 60 samples were excavated. Samples with indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) but below the PoG SCO (>8.2 mg/kg) remain in place from 0.17-20 ft bgs with concentrations ranging from 0.59 to 2 mg/kg. Three samples (SSHS-B3073A-SUB-4-6, SSHS-B3286-SUB-0.17-2, SSHS-B4164-SUB-2-4) had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) and PoG SCO (>8.2 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 29 to 46 mg/kg. SSHS-B3073A-SUB-4-6, and SSHS-B3286-SUB-0.17-2 were excavated. SSHS-B4164-SUB-2-4 remains in place at 46 mg/kg which is located beneath hardscape at 2-4 ft bgs.
- Phenanthrene – A total of two samples (SSHS-B3073A-SUB-4-6 and SSHS-B4164-SUB-2-4) had phenanthrene detected above the Restricted Residential SCO (>100 mg/kg) but below the PoG SCO (>1000 mg/kg) from 2-6 ft bgs with concentrations ranging from 130 to 350 mg/kg. SSHS-B3073A-SUB-4-6 was excavated. SSHS-B4164-SUB-2-4 remains in place at 350 mg/kg which is located beneath hardscape at 2-4 ft bgs.
- Pyrene – A total of two samples (SSHS-B3073A-SUB-4-6 and SSHS-B4164-SUB-2-4) had pyrene detected above the Restricted Residential SCO (>100 mg/kg) but below the PoG SCO (>1000 mg/kg) from 2-6 ft bgs with concentrations ranging from 150 to 270 mg/kg. SSHS-B3073A-SUB-4-6 was excavated. SSHS-B4164-SUB-2-4 remains in place at 270 mg/kg which is located beneath hardscape at 2-4 ft bgs.

VOCs

- Acetone – A total of six samples had acetone detected above the PoG SCO (>0.05 mg/kg) but not the Restricted Residential SCO (>100 mg/kg) from 4-28 ft bgs with concentrations ranging from 0.052 to 40 mg/kg. All six samples remain in place.
- Dichloromethane – One sample (SSHS-B3073A-SUB-2-4) had dichloromethane detected above the PoG SCO (>0.05 mg/kg) but not the Restricted Residential SCO (>100 mg/kg) from 2-4 ft bgs with a concentration of 0.55 mg/kg. This sample was excavated during IRM #5A2.
- Ethylbenzene – One sample (SSHS-B3930-SUB-8-10) had ethylbenzene detected above the PoG SCO (>1 mg/kg) but not the Restricted Residential SCO (>41 mg/kg) from 8-10 ft bgs with a concentration of 1.9 mg/kg. This sample remains in place.
- Methyl Ethyl Ketone – One sample (SSHS-B4163-SUB-6-8) had methyl ethyl ketone detected above the PoG SCO (>0.12 mg/kg) but not the Restricted Residential SCO (>100 mg/kg) at 6-8 ft bgs with a concentration of 0.2 mg/kg. This sample remains in place.
- PCE – One sample (SSHS-B3454-SUB-22-24) had PCE detected above the Restricted Residential SCO (>19 mg/kg) and PoG SCO (>1.3 mg/kg) from 22-24 ft bgs at 40 mg/kg. This sample remains in place below the water table. B3454 is also located within AOC-19 and this PCE concentration is attributed to that AOC.

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- Toluene – Two samples (SSHS-B3920-SUB-26-28, and SSHS-B3454-SUB-22-24) had Toluene detected above the PoG SCO (>0.7 mg/kg) but not the Restricted Residential SCO (>100 mg/kg) from 22-28 ft bgs with concentrations ranging from 2 to 19 mg/kg. SSHS-B3920-SUB-26-28 remains in place below the water table at 19 mg/kg. SSHS-B3454-SUB-22-24 remains in place below the water table at 2 mg/kg.

- TCE – Three samples (SSHS-B3454-SUB-22-24, SSHS-B3920-SUB-24-26, and SSHS-B3920-SUB-26-28) had TCE detected above the Restricted Residential SCO (>21 mg/kg) and PoG SCO (>0.47 mg/kg) from 22-26 ft bgs with concentrations ranging from 25 to 170 mg/kg. SSHS-B3454-SUB-22-24 remains in place below the water table at 25 mg/kg. SSHS-B3920-SUB-24-26 and SSHS-B3920-SUB-26-28 remain in place below the water table at 170 and 130 mg/kg, respectively. B3454 is located within AOC-19 and B3920 in the vicinity of AOC-19 and these TCE concentrations are attributed to that AOC. Two samples (SSHS-B2215-SUB-0.17-2, and SSHS-B3454A-SUB-24-26) had TCE detected above the PoG SCO (>0.47 mg/kg) but not the Restricted Residential SCO (21 mg/kg) from 0.17-2 and 24-26 ft bgs with concentrations ranging from 2.5 to 17 mg/kg. SSHS-B2215-SUB-0.17-2 was excavated during IRM #5A2. SSHS-B3454A-SUB-24-26 remains in place below the water table at 2.5 mg/kg.

The nature and extent of COPCs remaining in place in the NAF, FFC, and Tennis Court and Main Parking Lot Area, including AOC-16-3, are presented in Section 6.3.1, 6.3.2, and 6.3.3, respectively. The nature and extent discussed in Sections 6.3.1, 6.3.2, and 6.3.3 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-16-3.

AOC-16-3 Groundwater

Potential impacts of AOC-16-3 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed within AOC-16-3 include MW-52, MW-56, MW-57, MW-59S, MW-59I, MW-60, MW-63S, MW-63I, MW-65, MW-65R, MW-76S, MW-76I, MW-79S, MW-79I, MW-92S, and MW-92I. Temporary monitoring wells installed within AOC-16-3 include B3856S (PCBs), B3856I (PCBs), B3867 (PCBs, metals, SVOCs, VOCs), B3868S (PCBs), B3868I (PCBs), B3869S (PCBs), B3869I (PCBs), B3874 (PCBs, metals, SVOCs, VOCs), B2722 (metals), B572A (SVOCs, VOCs), B3090 (VOCs), B3883 (PCBs), B3885 (PCBs), B3886 (PCBs, metals, SVOCs, VOCs), B3893S (PCBs), B3893I (PCBs), B3909S (PCBs), B3909I (PCBs). Monitoring wells installed downgradient of AOC-16-3 include MW-106, MW-57R, MW-100S, MW-100I, MW-58 and MW-36.

Groundwater samples collected on the NAF are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Groundwater samples collected on the FFC are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Groundwater samples collected in the Main Parking Lot and Tennis Courts area are shown compared to TOGS groundwater standards on **Figures 5-11A-1** through **5-11D-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater

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standards. Metals and VOCs were not detected above TOGS groundwater standards within and downgradient of AOC-16-3. PCBs and SVOCs were detected above TOGS groundwater standards within and/or downgradient of AOC-16-3.

PCBs

PCBs were detected above TOGS groundwater standards within AOC-16-3 at MW-56, MW-57, and MW-60 and MW-63I in February 2021 and at temporary well B3856I in April 2021 (0.12 µg/L). PCBs were not detected above TOGS groundwater standards downgradient at MW-57R (sampled May 2023, September 2023, November 2023, January 2024, and April 2024), MW-100S (sampled September 2023 and April 2024), MW-100I (sampled September 2023 and April 2024), and MW-58 (sampled February 2021, April 2021, and September 2023). PCB TOGS exceedances at MW-56 (0.59 µg/L), MW-57 (40.9 µg/L), MW-60 (0.152 µg/L), and MW-63I (0.53 µg/L) were detected in samples collected between 17 and 18 February 2021. These samples were collected shortly after monitoring well installation between 28 January and 8 February 2021. Elevated turbidity readings above 10 nephelometric turbidity units were observed during the February 2021 sampling event at MW-56 and MW-63I. Subsequent PCBs results at MW-56 were reported as non-detect in September 2023 and April 2024. Subsequent PCBs results at MW-57 and MW-60 were reported as non-detect in April 2021 and July 2022. Subsequent PCBs results at MW-63I were reported as non-detect in April 2021 and September 2023. Because subsequent sampling of these monitoring wells have been reported as non-detect and initial exceedances were not repeated, initial exceedances are indicative of a short-term bias caused by disturbance of the subsurface associated with the monitoring well construction. Monitoring well construction can increase turbidity and artificially elevate COPC concentrations through the desorption of constituents from soil particles and result in samples that are not representative of the aquifer. Subsequent sampling of MW-56, MW-57, MW-60, and MW-63I has demonstrated that PCBs are below TOGS in the area monitored by these wells. PCB exceedances are attributed to short-term disturbance of subsurface conditions associated with well installation; therefore, further assessment is not warranted. PCBs were reported above TOGS groundwater standards at MW-52. PCBs detected above TOGS groundwater standards at MW-52 are attributed to AOC-19 and discussed further in Section 5.2.29.

SVOCs

SVOCs were not detected above TOGS groundwater standards within AOC-16-3. SVOCs benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected above TOGS groundwater standards downgradient of AOC-16-3 in May 2023 at MW-57R and MW-106 and in April 2024 at MW-106. SVOC detections at MW-57R and MW-106 have been sporadic and nonrepeatable. SVOCs were not reported above TOGS groundwater standards at MW-57R for subsequent sampling events in September 2023, November 2023, January 2024, and April 2024. SVOCs were not reported above TOGS groundwater standards at MW-106 in September 2023, November 2023, and January 2024. As further discussed

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in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent. Therefore, additional investigation is not warranted.

AOC-16-3 Summary

AOC-16-3 is a former machine shop area located across the NAF, FFC, and Tennis Court and Main Parking Lot Area (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-16-3 and to evaluate potential migration pathways in accordance with RI objectives.

PCBs, metals, SVOCs, and VOCs were detected in soil above Restricted Residential SCOs. PCBs were detected above the Restricted Residential SCO up to 32 ft bgs, metals up to 14 ft bgs, SVOCs up to 20 ft bgs, and VOCs up to 26 ft bgs. Portions of AOC-16-3 were excavated as part of the IRM #1, FFC IRM and IRM #5A2. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

Section 6.3.1, 6.3.2, and 6.3.3 presents the nature and extent of COPCs remaining in place within the NAF, FFC, and Tennis Court and Main Parking Lot Area, respectively, including AOC-16-3, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-16-3 on the Revised BCP Site.

Exceedances of TOGS groundwater standards within or downgradient of AOC-16-3 are attributed to short-term disturbance of subsurface conditions associated with monitoring well installation (PCBs), were sporadic and not reproducible (SVOCs), or attributable to a different AOC (PCBs at MW-52 attributed to AOC-19). As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

5.2.26.2 AOC-16 – FFC (AOC-16-4 and AOC-16-5)

AOC-16-4 and AOC-16-5 are located on the FFC (**Figure 1-4**). Potential impacts to AOC-16-4 and AOC-16-5 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-16-4 and AOC-16-5 are shown compared to Restricted Residential SCO values on **Figures 5-7A-H** (0-16 ft bgs) and **5-9A-P** (16-48 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Media of concern associated with AOC-16 includes soil and groundwater. COPCs proposed for investigation of AOC-16 as part of the RI Work Plan (Geosyntec, 2019a) included PCBs, metals, SVOCs, and VOCs. Excavations within AOC-16-4 were completed up to 7 ft bgs and excavations within AOC-16-5 completed to 9 ft bgs as part of the FFC IRM, as discussed in Section 3.2.4.

AOC-16 FFC Soil

A total of 95 soil borings were advanced within AOC-16-4 and AOC-16-5 to a maximum depth of 38 ft bgs. Within the FFC, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature

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and extent of COPCs observed above Restricted Residential SCOs. COPCs including PCBs, metals, and SVOCs were detected above Restricted Residential SCOs. VOCs were not detected above Restricted Residential SCOs.

PCBs

94 samples within AOC-16-4 and AOC-16-5 were detected above the Restricted Residential SCO (>1 mg/kg) up to depths of 12 ft bgs. Due to the size of AOC-16-4 and AOC-16-5 and number of exceedances, a detailed list of each sample is not provided in the text; however, a high-level summary is provided below by each respective COPC and SCO exceedance.

- A total of 16 soil boring samples collected within AOC-16-5 had PCBs detected above TSCA level (>=50 mg/kg). No soil boring samples collected within AOC-16-4 have PCBs detected above TSCA level (>=50 mg/kg). Concentrations ranged from 52.9 to 690 mg/kg from 0-8 ft bgs. 15 of the 16 TSCA level exceedances were excavated as part of the FFC IRMs with SSHS-B234A-SUB-6-8 remaining in place from 6-8 ft bgs at 285.3 mg/kg. A portion of this boring collected from 4-6 ft bgs was excavated as part of the FFC IRMs as further discussed in Section 6.3.2.

- A total of 49 soil boring samples collected within AOC-16-5 had PCBs detected above the PoG SCO (>3.2 mg/kg) but below TSCA level (>=50 mg/kg). No soil boring samples collected within AOC-16-4 had PCBs detected above PoG SCOs (>3.2 mg/kg) Concentrations ranged from 3.29 to 41.68 mg/kg from 0-12 ft bgs. 42 of the 49 PoG SCO exceedances were excavated as part of the FFC IRMs. Samples remaining in place above the PoG SCO are between 8-12 ft bgs and are further discussed in Section 6.

- A total of 29 soil boring samples collected within AOC-16-4 and AOC-16-5 had PCBs above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>3.2 mg/kg). Concentrations ranged from 1.127 to 2.94 mg/kg from 0-10 ft bgs. 28 of the 29 Restricted Residential SCOs were excavated as part of the FFC IRMs, with SSHS-B322-SUB-8-10 remaining in place from 8-10 ft bgs at 2.23 mg/kg as further discussed in Section 6.

Metals

- Arsenic – Three samples (SSHS-B2110-SUB-2-4, SSHS-B2110-SUB-4-6, SSHS-B2110-SUB-6-8) had arsenic detected above the Restricted Residential SCO (>16 mg/kg), and the PoG SCO (> 16 mg/kg), from 2-8 ft bgs, with concentration ranging from 19 to 36 mg/kg. SSHS-B2110-SUB-2-4 and SSHS-B2110-SUB-4-6 were excavated as part of the FFC IRM. SSHS-B2110-SUB-6-8 remains in place with a concentration of 19 mg/kg.

- Barium – Two samples (SSHS-B2225-SUB-4-6 and SSHS-B2226-SUB-2-4) had barium detected above the Restricted Residential SCO (>400 mg/kg), but not the PoG SCO (> 820 mg/kg), from 2-6 ft bgs with concentrations ranging from 510 to 630 mg/kg. Two samples (SSHS-B2226-SUB-4-6 and SSHS-B2935-SUB-8-10) had barium detected above the Restricted Residential SCO (>400 mg/kg) and the PoG SCO (> 820 mg/kg), from 4-6 and

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8-10 ft bgs with concentrations ranging from 870 to 3,700 mg/kg. These four samples were excavated as part of the FFC IRM.

- Cadmium – One sample (SSHS-B2935-SUB-8-10) had cadmium detected above the Restricted Residential SCO (>4.3 mg/kg) but below the PoG SCO (7.5 mg/kg) from 8-10 ft bgs at 5.8 mg/kg. This sample was excavated as part of the FFC IRM.

- Chromium – Two samples (SSHS-B2226-SUB-8-10, and SSHS-FB1) had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg) from 0.5-10 ft bgs with concentrations ranging from 134 to 340 mg/kg. SSHS-FB1 was excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 340 mg/kg. 22 total samples had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) but not the Restricted Residential SCO (>110 mg/kg) from 0-12 and 34-36 ft bgs with concentrations ranging from 20 to 88.1 mg/kg. 18 of the 22 samples were excavated during the FFC IRM. SSHS-B3860-SUB-34-36 remains in place below the water table from 34-36 ft bgs with a concentration of 20 mg/kg. SSHS-B2110-SUB-6-8 remains in place from 6-8 ft bgs with a concentration of 32 mg/kg. SSHS-B2110-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 20 mg/kg. SSHS-B2110-SUB-10-12 remains in place from 10-12 ft bgs with a concentration of 35 mg/kg.

- Copper – Five samples had copper detected above the Restricted Residential SCO (>270 mg/kg) but below the PoG SCO (>1,720 mg/kg) from 2-12 ft bgs with concentrations ranging from 360 to 790 mg/kg. Three of the five samples were excavated as part of the FFC IRM. SSHS-B2110-SUB-6-8 remains in place from 6-8 ft bgs with a concentration of 720 mg/kg. SSHS-B2110-SUB-10-12 remains in place from 10-12 ft bgs with a concentration of 790 mg/kg.

- Lead – One sample (SSHS-B2223-SUB-4-6) had lead detected above the Restricted Residential SCO (>400 mg/kg) but below PoG SCO (>450 mg/kg) from 4-6 ft bgs at 420 mg/kg. Five samples had lead detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (>450 mg/kg) from 2-10 ft bgs with concentrations ranging from 570 to 2,800 mg/kg. Five of the six samples were excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place at 8-10 ft bgs with a concentration of 1,100 mg/kg.

- Mercury – One sample (PS-FD-33 collected from parent sample SSHS-B2193-SUB-2-4) had mercury detected above the Restricted Residential SCO (>0.81 mg/kg) and PoG SCO (>0.73 mg/kg) from 2-4 ft bgs at 0.86 mg/kg. This sample was excavated as part of the FFC IRM.

- Nickel – Seven samples had nickel detected above the Restricted Residential SCO (>310 mg/kg) and PoG SCO (>130 mg/kg) from 0.17-14 ft bgs with concentrations ranging from 560 to 2,200 mg/kg. Three of the seven samples were excavated as part of the FFC IRM. SSHS-B2110-SUB-6-8 remains in place from 6-8 ft bgs with a concentration of 770 mg/kg. SSHS-B2110-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 560 mg/kg. SSHS-B2110-SUB-10-12 remains in place from 10-12 ft bgs with a concentration of 980 mg/kg. SSHS-B2110-SUB-12-14 remains in place from 12-14 ft bgs with a

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concentration of 970 mg/kg. Three samples (SSHS-B2110-SS, SSHS-B2225-SUB-4-6, and SSHS-B2227-SUB-2-4) had nickel detected above the PoG SCO (>130 mg/kg) but below the Restricted Residential SCO (>310 mg/kg) from 0-6 ft bgs with concentrations ranging from 140 to 160 mg/kg. All three samples were excavated during the FFC IRM.

SVOCs

- Benz(a)anthracene – A total of three samples (SSHS-FB1, SSHS-B2226-SUB-6-8 and SSHS-B2226-SUB-8-10) had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0.5-10 ft bgs with concentrations ranging from 1.9 to 2.4 mg/kg. SSHS-FB1, and SSHS-B2226-SUB-6-8 were excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 2 mg/kg.
- Benzo(a)pyrene – A total of three samples (SSHS-FB1, SSHS-B2226-SUB-6-8 and SSHS-B2226-SUB-8-10) had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>22 mg/kg) from 0.5-10 ft bgs with concentrations ranging from 1.7 to 3 mg/kg. SSHS-FB1, and SSHS-B2226-SUB-6-8 were excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 2.1 mg/kg.
- Benzo(b)fluoranthene – A total of two samples (SSHS-B2226-SUB-6-8 and SSHS-B2226-SUB-8-10) had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and above the PoG SCO (>1.7 mg/kg) from 6-10 ft bgs with concentrations ranging from 2.5 to 3.2 mg/kg. SSHS-B2226-SUB-6-8 was excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 2.5 mg/kg. One sample (SSHS-FB1) had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) but not above the PoG SCO (>1.7 mg/kg) at 0.5-2 ft bgs with a concentration of 1.3 mg/kg. This sample was excavated during the FFC IRM.
- Chrysene – Three samples (SSHS-FB1, SSHS-B2226-SUB-6-8 and SSHS-B2226-SUB-8-10) had chrysene detected above the PoG SCO (>1 mg/kg) but not the Restricted Residential SCO (>3.9 mg/kg) from 0.5-10 ft bgs with concentrations ranging from 2 to 2.3 mg/kg. SSHS-FB1, and SSHS-B2226-SUB-6-8 were excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 2.1 mg/kg.
- Dibenz(a,h)anthracene – Two samples (SSHS-FB1, SSHS-B2226-SUB-6-8) had dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg) but below the PoG SCO (>1000 mg/kg) from 0.5-8 ft bgs with concentrations ranging from 0.39 to 0.45 mg/kg. Both samples were excavated as part of the FFC IRM.
- Indeno(1,2,3-cd)pyrene – Three samples (SSHS-FB1, SSHS-B2226-SUB-6-8 and SSHS-B2226-SUB-8-10) had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) but below the PoG SCO (>8.2 mg/kg) from 0.5-10 ft bgs with concentrations ranging from 0.87 to 1.5 mg/kg. SSHS-FB1, and SSHS-B2226-SUB-6-8

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were excavated as part of the FFC IRM. SSHS-B2226-SUB-8-10 remains in place from 8-10 ft bgs with a concentration of 0.87 mg/kg.

The nature and extent of COPCs remaining in place in the FFC is presented in Section 6.3.2. The nature and extent discussed in Section 6.3.2 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-16-4 and AOC-16-5. In areas where impacts extend to or are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054, as discussed in Section 6.

AOC-16 FFC Groundwater

Potential impacts of AOC-16-4 and AOC-16-5 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOCs. Monitoring wells MW-11S, MW-11I are located downgradient of AOC-16-4. MW-11S and MW-11I were analyzed for PCBs, metals, SVOCs, and VOCs. Temporary monitoring wells B2541 (analyzed for metals and SVOCs), B2819 (analyzed for VOCs), B3858I (analyzed for PCBs), B3858S (analyzed for PCBs), B3865S (analyzed for PCBs, metals, SVOCs and VOCs), and B3865I (analyzed for PCBs, metals, SVOCs and VOCs) are located downgradient of AOC-16-4. Temporary monitoring well B2542 (analyzed for metals and SVOCs) and B2542A (analyzed for metals and VOCs) were installed within AOC-16-4. Results are shown compared to TOGS groundwater standards on **Figures 5-8A-1** through **5-8D-2**. Analytical results including those from previous investigations are presented in **Tables 5-8** to **5-11** for PCBs, metals, SVOCs, and VOCS, respectively, and are compared to TOGS groundwater standards.

VOCs, metals, and SVOCs were detected above TOGS groundwater standards downgradient or within AOC-16-4. TCE was detected above TOGS groundwater standards at B2819 and MW-11I. These TCE exceedances are attributed to AOC-10B and AOC-11 discussed further in Section 5.2.18 and 5.2.21, respectively. Metals were detected above TOGS groundwater standards at B2541 for nickel (120 µg/L), B2542 for aluminum (26,000 µg/L), copper (470 µg/L), lead (66 µg/L), and nickel (5,000 µg/L), B2542A for nickel (380 µg/L), and B3865I (200 µg/L) for nickel. Metals were not detected above TOGS groundwater standards further downgradient at MW-11S and MW-44. Benzo(a)anthracene (0.19 µg/L), benzo(b)fluoranthene (0.14 µg/L), and chrysene (0.61 µg/L) were detected above TOGS groundwater standards at B3865S. SVOCs were not detected above TOGS groundwater standards at further downgradient temporary wells B3877I and B3877S.

Monitoring wells MW-44 and MW-38 are located downgradient of AOC-16-5. MW-44 and MW-38 were analyzed for PCBs, metals, SVOCs, and VOCs. Temporary monitoring wells B3859S (analyzed for PCB), B3859I (analyzed for PCBs), B3860S (analyzed for PCBs), B3860I (analyzed for PCBs, metals, SVOCs, VOCs), B3094 (analyzed for VOCs), B3093 (analyzed for VOCs), were installed within AOC-16-5. Temporary monitoring wells B3863 (analyzed for PCBs), B3864S (analyzed for PCBs), B3864I (analyzed for PCBs, metals, SVOCs, VOCs) are located downgradient of AOC-16-5. Metals, SVOCs, and VOCS were not detected above TOGS groundwater standards within and downgradient of AOC-16-5. PCBs were detected above TOGS groundwater standards at B3860I (0.19 µg/L). PCBs were not detected above TOGS groundwater standards downgradient of AOC-16-5 at monitoring wells MW-44 and MW-38.

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As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of metals and PCB exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. Therefore, additional investigation is not warranted.

AOC-16 FFC Summary

AOC-16-4 and AOC-16-5 are former machine shop areas located on the FFC (**Figure 1-4**). These AOCs were investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-16-4 and AOC-16-5 and to evaluate potential migration pathways in accordance with RI objectives.

PCBs, metals, and SVOCs were identified above Restricted Residential SCOs. PCBs were detected above the Restricted Residential SCO up to 12 ft bgs, metals up to 14 ft bgs, and SVOCs up to 10 ft bgs. VOCs were not detected above Restricted Residential SCOs within AOC-16-4 or AOC-16-5. Excavations within AOC-16-4 were completed up to 7 ft bgs and excavations within AOC-16-5 completed to 9 ft bgs as part of the FFC IRM, as discussed in Section 3.2.4. COPCs identified in soil within AOC-16 may be related to these historic features but have been removed by FFC IRM excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

Section 6.3.2 presents the nature and extent of COPCs remaining in place within the FFC, including AOC-16-4 and AOC-16-5, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.2, no further assessment is warranted to define the nature and extent of impacts in soil and groundwater for AOC-16-4 and AOC-16-5 on the Revised BCP Site.

PCBs were not detected above TOGS groundwater standards within or downgradient of AOC-16-4. Metals, VOCs, and SVOCs were detected above TOGS groundwater standards downgradient or within AOC-16-4. VOCs detected above TOGS groundwater standards are attributed to AOC-10D (Section 5.2.20) and AOC-11 (Section 5.2.21). Metals were reported above TOGS groundwater standards in temporary monitoring wells. Metals and SVOCs were not reported above TOGS groundwater standards in downgradient permanent monitoring wells. Metals, SVOCs, and VOCs were not detected above TOGS groundwater standards within and downgradient of AOC-16-5. PCBs were detected above TOGS groundwater standards at a temporary monitoring well within AOC-16-5. PCBs were not detected above TOGS groundwater standards in downgradient permanent monitoring wells. The absence of metals and PCB exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than

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the isolated exceedances reported in temporary monitoring well samples. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

5.2.26.3 AOC-16 – EHS Building (AOC-16-1)

AOC-16-1 partly underlies the EHS Building and extends to the west of the EHS Building within the New BCP Site (**Figure 1-4**). Investigation findings and associated conclusions for AOC-16-1 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA. The media of concern associated with AOC-16-1 as per the 2019 RI Work Plan included soil and groundwater. COPCs included PCBs, metals, SVOCs and VOCs. It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. Therefore, AOC-16-1 was evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected within AOC-16-1 and groundwater data collected within and downgradient of the AOC, outside of the EHS building footprint. Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**.

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AOC-16-1 Soil

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of this feature relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-16-1 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

Investigation findings and associated conclusions for the portions of AOC-16-1 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

AOC-16-1 Groundwater

Potential impacts of AOC-16-1 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells MW-83S, MW-83I, and MW-94S were installed within AOC-16-1. Monitoring wells MW-94I, MW-47, MW-47I, MW-90S, MW-90I, MW-74I and MW-74S are located downgradient of AOC-16-1. Temporary monitoring well B3203A was installed within AOC-16-1 and analyzed for PCBs, metals, SVOCs. Other temporary monitoring wells were installed within AOC-16-1 for analysis

of VOCs, including B3205A, B3205B, B93, B96, B97, B3202A, B3202B, B3203A, B3203B, B3204A, and B3204B.

PCBs, metals, and SVOCs were not detected above TOGS groundwater standards within and downgradient of AOC-16-1. VOCs were detected above TOGS groundwater standards downgradient of AOC-16-1 at MW-47I and temporary monitoring wells B92 and B94. MW-47I exceeded the TOGS groundwater standard for benzene (1.5 µg/L compared to TOGS of 1 µg/L) in September 2021. Benzene was non-detect at MW-47I in samples collected in October 2021 and April 2024.

TCE was detected above the TOGS groundwater standard (5 µg/L) at temporary monitoring wells B92 (5.6 µg/L) and B94 (8.9 µg/L) in August 2014. TCE was not detected above TOGS groundwater standards at MW-47 in September 2016 (3.9 µg/L) and was non-detect in February 2021 and July 2021. TCE was non-detect at MW-47I in September 2021, October 2021, and April 2024.

As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of TCE exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. Therefore, additional investigation is not warranted.

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AOC-16-1 Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab vapor samples were collected within AOC-16-1 at SSHS-04-SS, SSHS-05-SS, SSHS-06-SS, SSHS-07-SS, SSHS-12-SS, SSHS-13-SS, SS-122, and SS-120. TCE was detected above NYSDOH Matrix Guidelines for sub-slab vapor at SSHS-04-SS (390 µg/m^3) and SSHS-05-SS (2,100 µg/m^3) within AOC-16-1.

VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. TCE effluent concentrations for the F-Wing area (portion of EHS building located above AOC-16-1) decreased between June 2018 and July 2021, increased in December 2021, slightly decreased in November 2023 and 2024, and then increased in December 2025 as shown on **Figure 6V-1B**. This indicates that TCE is still present in sub-slab vapor beneath the EHS Building and may potentially be associated with AOC-16-1.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional

information on indoor air and soil vapor investigations. The current nature and extent of VOCs in indoor air is discussed in Section 6.1.2.

AOC-16-1 Summary

AOC-16-1 is a former machine shop area located beneath the EHS building (AOC-1). This AOC partly underlies the EHS building but mostly lies outside to the west of the EHS building within the New BCP Site (**Figure 1-4**). Due to physical constraints associated with the EHS Building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data collected within AOC-16-1 and groundwater data collected within and downgradient of AOC-16-1, outside of the EHS building footprint.

PCBs, metals, and SVOCs were not detected in groundwater above TOGS standards downgradient of AOC-16-1. Benzene was detected above TOGS groundwater standards at MW-47I but this exceedance was not repeated in subsequent sampling events. TCE was detected above TOGS groundwater standards at temporary monitoring wells B92 and B94 but not detected above TOGS groundwater standards at downgradient monitoring wells MW-47 and MW-47I. The absence of TCE exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

VOCs in sub-slab vapor were reported above NYSDOH Matrix Guidelines for TCE within AOC-16-1. VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS Building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls, including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and AOC-16-1 located under the EHS Building is proposed to be managed under the Track 4 remedy.

Investigation findings and associated conclusions for the portions of AOC-16-1 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA

5.2.27 AOC-17 (Possible Disposal Areas)

AOC-17 consists of possible disposal areas. AOC-17 consists of nine discrete areas, six of which are located within the Revised BCP Site (**Figure 1-4**). AOC-17 includes a possible former plating area in the NAF (AOC-17-9); a former coal pile in the Rear Parking Lot (AOC-17-3), an acid drainage pit located under the northern portion of the EHS building (AOC-17-8), and four former

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potential disposal areas (AOC-17-4, AOC-17-5, AOC-17-6) located under portions of the EHS building.

AOC-17-4, AOC-17-5, AOC-17-6 partly underly the EHS Building (F-Wing) and extend to the west onto the New BCP Site. AOC-17-3 in the Rear Parking Lot is predominantly located within the Revised BCP Site but extends onto the New BCP Site. AOC-17-8 predominantly underlies the EHS Building (Gymnasium). A small portion of AOC-17-8 extends onto the New BCP Site. Investigation findings and associated conclusions for portions of AOC-17-3, AOC-17-4, AOC-17-5, and AOC-17-6, AOC-17-7, AOC-17-8 that are located within the New BCP Site will be included in the #c808054 RI.

Multiple AOCs overlap AOC-17 within the Revised BCP Site.

- AOC-17-3: spatially overlaps with AOC-3;
- AOC-17-4: spatially overlaps with AOC-1A, AOC-1B, AOC-2, AOC-3, AOC-9-2, AOC-10D-6, AOC-11, AOC-12-3, AOC-13, and AOC-16-1;
- AOC-17-5: spatially overlaps with AOC-1A, AOC-1B, AOC-5-1, AOC-5-2, AOC-5-4, AOC-10D-5, and AOC-10D-6;
- AOC-17-6: spatially overlaps with AOC-3, AOC-10D-5 and AOC-10D-6;
- AOC-17-8: spatially overlaps with AOC-1A, AOC-1B, AOC-2E, AOC-4, AOC-10D-2, and AOC-10D-4; and
- AOC-17-9: spatially overlaps with AOC-10A-6, AOC-12-1, and AOC-16-3.

AOC-17-1 and AOC-17-2 are located to the South of the Revised BCP Site on Site #p808049. AOC-17-1 and AOC-17-2 will be addressed in the SC of the Former Scott Technologies Site (NYSDEC #p808049). AOC-17-7 partly underlies the EHS Building (K-Wing) but is predominantly located to the east within the New BCP Site.

Potential releases of COPCs in underlying soil due to historical operations have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), the media of concern identified for AOC-17 are soil and groundwater, and the COPCs are PCBs, metals, SVOCs, and VOCs; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through sub-slab vapor sampling.

Soil, groundwater, and soil vapor potentially associated with AOC-17 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. For each AOC-17 area located within the Revised BCP Site, a summary is presented below based on Site Area, including investigations completed, analytical results, and findings.

5.2.27.1 AOC-17 - NAF (AOC-17-9)

AOC-17-9 (possible former plating area) is located in the NAF (**Figure 1-4**). AOC-12-1 (plating, heat treatment and tumbling areas) and AOC-10A-6 (contaminated subsurface soils) are both

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located within AOC-17-9. Portions of AOC-16-3 (machine shop area) overlap AOC-17-9. Potential impacts to AOC-17-9 have been investigated through collection of soil and groundwater samples. Soil borings collected as part of the RI investigation of AOC-17-9 are shown compared to Restricted Residential SCO values on **Figures 5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Excavations within AOC-17-9 were completed up to 16 ft bgs (approximate depth to water table) as part of IRM #5A2, as discussed in Section 3.2.5. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6.

AOC-17-9 Soil

A total of 145 soil borings were installed within AOC-17-9 to a maximum depth of 34 ft bgs across multiple soil sampling events (Section 2.2). Within the NAF, soil borings were collected on a 60x60 ft grid to the water table and subsequent step out samples collected on approximately 30 ft spacing to further define the nature and extent of COPCs observed above Restricted Residential SCOs. COPCs including PCBs, metals, and SVOCs were detected within AOC-17-9 above Restricted Residential SCOs. VOCs were not detected within AOC-17-9 above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were detected up to a depth of 18 ft bgs, below the water table (approximately 16 ft bgs). Metals above Restricted Residential SCOs, including barium, cadmium, chromium, copper, lead, mercury, and zinc, were detected up to a depth of 14 ft bgs. SVOCs above the Restricted Residential SCOs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, and indeno(1,2,3-cd)pyrene, were detected up to a depth of 10 ft bgs.

A summary of TSCA, Restricted Residential SCO, and PoG SCO exceedances found within AOC-17-9 is provided below. Excavations within AOC-17-9 were completed up to 16 ft bgs (approximate depth to water table) as part of IRM #5A2. Restricted Residential SCO exceedances remaining in place following IRM #5A2 are discussed in Section 6. Samples which have been excavated are noted.

PCBs

- The following soil boring samples within AOC-17-9 had PCBs detected above TSCA level (>= 50 mg/kg):
    - SSHS-B3917-SUB-6-8 (68.8 mg/kg) – Excavated
- The following soil boring samples within AOC-17-9 had PCBs detected above the PoG SCO (>3.2 mg/kg) but below the TSCA Level (>=50 mg/kg):
    - SSHS-B3505-SUB-0.17-2 (37.7 mg/kg) – Excavated
    - SSHS-B3508-SUB-2-4 (4.8 mg/kg) – Excavated
    - SSHS-B3917-SUB-8-10 (35.8 mg/kg) – Excavated
    - SSHS-B3917-SUB-10-12 (22.61 mg/kg) – Excavated
    - SSHS-B3917-SUB-12-14 (18.85 mg/kg) – Remaining in place

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- The following soil boring samples within AOC-17-9 had PCBs detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>3.2 mg/kg):
    - SSHS-B3064-SUB-2-4 (1.77 mg/kg) – Excavated
    - SSHS-B3075-SUB-2-4 (1.12 mg/kg) – Excavated
    - SSHS-B3508-SUB-0.17-2 (2.82 mg/kg) – Excavated
    - SSHS-B3509-SUB-0.17-2 (1.09 mg/kg) – Excavated
    - SSHS-B3910-SUB-14-16 (2.01 mg/kg) – Remaining in place
    - SSHS-B3917-SUB-16-18 (1.21 mg/kg) – Remaining in place
    - SSHS-B3929-SUB-12-14 (1.108 mg/kg) – Remaining in place
    - SSHS-B3929-SUB-10-12 (1.659 mg/kg) – Excavated
    - SSHS-B3929-SUB-6-8 (3.15 mg/kg) – Excavated
    - 12 Sep 00B40_0.5-2.5 (1.31 mg/kg) - Excavated

Metals

- Barium – Two samples (SSHS-B3065-SUB-4-6 and SSHS-B3032-SUB-12-14) within AOC-17-9 had barium detected above the Restricted Residential SCO (>400 mg/kg) but not the PoG SCO (>820 mg/kg) from 4-6 and 12-14 ft bgs with concentrations ranging from 570 to 800 mg/kg. SSHS-B3065-SUB-4-6 remains in place from 4-6 ft bgs with a concentration of 800 mg/kg. SSHS-B3032-SUB-12-14 remains in place from 12-14 ft bgs with a concentration of 570 mg/kg.
- Cadmium – One sample (SSHS-B3077-SUB-2-4) within AOC-17-9 had cadmium detected above the Restricted Residential SCO (>4.3 mg/kg) and PoG SCO (>7.5 mg/kg) from 2-4 ft bgs with a concentration of 34 mg/kg. This sample was excavated during IRM #5A2.
- Chromium – One sample (SSHS-B3319-SUB-2-4) within AOC-17-9 had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg) from 2-4 ft bgs with a concentration of 300 mg/kg. SSHS-B3319-SUB-2-4 was excavated during IRM #5A2. A total of 37 samples within AOC-17-9 had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) but below the Restricted Residential SCO (>110 mg/kg) from 0-32 ft bgs with concentrations ranging from 20 to 91.4 mg/kg. One sample (SSHS-B3520-SUB-2-4) had hexavalent chromium run with a detection of 0.26 mg/kg. 35 of the 37 samples were excavated during IRM #5A2. SSHS-B5301-SUB-22-24 remains in place below the water table from 22-24 ft bgs with a concentration of 28 mg/kg. SSHS-B5301-SUB-30-32 remains in place below the water table at 30-32 ft bgs with a concentration of 20 mg/kg.
- Copper – Two samples (SSHS-B3319-SUB-2-4 and SSHS-B3520-SUB-2-4) within AOC-17-9 had copper detected above the Restricted Residential SCO (>270 mg/kg) but not above the PoG SCO (>1,720 mg/kg) from 2-4 ft bgs with concentrations ranging from 350 to 560 mg/kg. These two samples were excavated during IRM #5A2.

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- Lead – One sample (SSHS-B3323-SUB-2-4) within AOC-17-9 had lead detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (>450 mg/kg) from 2-4 ft bgs with a concentration of 590 mg/kg. The sample was excavated during IRM #5A2.
- Mercury – A total of 18 samples within AOC-17-9 had mercury detected above the Restricted Residential SCO (>0.81 mg/kg) and above the PoG SCO (>0.73 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 0.85 to 15 mg/kg. 17 of these 18 samples were excavated during IRM #5A2. SSHS-B3078-SUB-2-4 remains in place from 2-4 ft bgs with a concentration of 0.85 mg/kg. One sample (SSHS-B3633-SUB-2-4) within AOC-17-9 had mercury detected above the PoG SCO (>0.73 mg/kg) but below the Restricted Residential SCO (>0.81 mg/kg) from 2-4 ft bgs with a concentration of 0.77 mg/kg. This sample was excavated during IRM #5A2.
- Nickel – One sample (SSHS-B3047-SUB-6-8) within AOC-17-9 had nickel detected above the PoG SCO (>130 mg/kg) but not the Restricted Residential SCO (>310 mg/kg) at 6-8 ft bgs with a concentration of 250 mg/kg. This sample remains in place.
- Zinc - One sample (SSHS-B3077-SUB-2-4) within AOC-17-9 had zinc detected above the Restricted Residential SCO (>10,000 mg/kg) and PoG SCO (>2,480 mg/kg) from 2-4 ft bgs with a concentration of 12,000 mg/kg. The sample was excavated during IRM #5A2.

SVOCs

- Benz(a)anthracene – A total of 17 samples within AOC-17-9 had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 1.1 to 49 mg/kg. These 17 samples were excavated during IRM #5A2.
- Benzo(a)pyrene – A total of 13 samples within AOC-17-9 had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>22 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 1.2 to 11 mg/kg. These 13 samples were excavated during IRM #5A2. One sample (SSHS-B3286-SUB-0.17-2) within AOC-17-9 had benzo(a)pyrene detected above the PoG SCO (>22 mg/kg) from 0.17-2 ft bgs with a concentration of 45 mg/kg. This sample was excavated during IRM #5A2.
- Benzo(b)fluoranthene – A total of eight samples within AOC-17-9 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>1.7 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 1.1 to 1.7 mg/kg. These eight samples were excavated during IRM #5A2. A total of 12 samples within AOC-17-9 had benzo(b)fluoranthene detected above the PoG SCO (>1.7 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 1.9 to 45 mg/kg. These 12 samples were excavated during IRM #5A2.
- Benzo(k)fluoranthene – Two samples (SSHS-B3286-SUB-0.17-2 and SSHS-B3304-SUB-2-4) within AOC-17-9 had benzo(k)fluoranthene detected above the Restricted Residential SCO (>3.9 mg/kg) from 0.17-4 ft bgs with concentration ranging from 4.7 to 17 mg/kg. These two samples were excavated during IRM #5A2. Three samples (SSHS-B3286-SUB-2-4, SSHS-B3295-SUB-0.17-2, and SSHS-B3295-SUB-2-4) within AOC-17-9 had

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benzo(k)fluoranthene detected above the PoG SCO (>1.7 mg/kg) but below the Restricted Residential SCO (>3.9 mg/kg) from 0.17-4 ft bgs with concentrations ranging from 2 to 3.9 mg/kg. These three samples were excavated during IRM #5A2.

- Chrysene – A total of six samples within AOC-17-9 had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg) from 0.17-4 ft bgs with concentrations ranging from 4 to 41 mg/kg. These six samples were excavated during IRM #5A2. A total of 12 samples within AOC-17-9 had chrysene detected above the PoG SCO (>1 mg/kg) but below the Restricted Residential SCO (>3.9 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 1.1 to 2.6 mg/kg. These 12 samples were excavated during IRM #5A2.
- Dibenz(a,h)anthracene – A total of 14 samples within AOC-17-9 had dibenz(a,h)anthracene detected above the Restricted Residential SCO (>0.33 mg/kg) but not above the PoG SCO (>1,000 mg/kg) from 0.17-6 ft bgs with concentrations ranging from 0.35 to 7.1 mg/kg. These 14 samples were excavated during IRM #5A2.
- Fluoranthene – One sample (SSHS-B3286-SUB-0.17-2) within AOC-17-9 had fluoranthene detected above the Restricted Residential SCO (>100 mg/kg) but not above the PoG SCO (>1,000 mg/kg) from 0.17-2 ft bgs with a concentration of 110 mg/kg. The sample was excavated during IRM #5A2.
- Indeno(1,2,3-cd)pyrene – A total of 33 samples within AOC-17-9 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) but below the PoG SCO (>8.2 mg/kg) from 0.17-10 ft bgs with concentrations ranging from 0.51 to 8.1 mg/kg. 32 of the 33 samples were excavated during IRM #5A2. SSHS-B3315-SUB-2-4 remains in place from 2-4 ft bgs with a concentration of 0.59 mg/kg. One sample (SSHS-B3286-SUB-0.17-2) within AOC-17-9 had indeno(1,2,3-cd)pyrene detected above the PoG SCO (>8.2 mg/kg) from 0.17-2 ft bgs with a concentration of 29 mg/kg. SSHS-B3286-SUB-0.17-2 was excavated during IRM #5A2.

The nature and extent of COPCs remaining in place in the NAF, including AOC-17-9, is presented in Section 6.3.1. The nature and extent discussed in Section 6.3.1 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-17-9. Restricted Residential SCO exceedances remaining in place have been delineated laterally to the extent practicable. In areas where impacts extend to or are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054, as discussed in Section 6.

AOC-17-9 Groundwater

Potential impacts of AOC-17-9 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed within AOC-17-9 include MW-56, MW-57, MW-59S, MW-59I, MW-60, MW-60SR, MW-60IR, and MW-65R. Temporary monitoring wells installed within AOC-17-9 include B3883 (analyzed for PCBs), B3885 (analyzed for PCBs), B3886 (analyzed for PCBs, metals, SVOCs, and VOCs), B3903S (analyzed for PCBs), B3903I (analyzed for PCBs), B3909S (analyzed for PCBs), B3909I

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(analyzed for PCBs), B3893I (analyzed for PCBs), and B3893S (analyzed for PCBs). Monitoring wells downgradient of AOC-17-9 include MW-57R, MW-100S, and MW-100I. Groundwater samples collected as part of the RI investigation of AOC-17-9 were analyzed for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. Metals and VOCs were not detected above TOGS groundwater standards. PCBs and SVOCs were detected above TOGS groundwater standards and are discussed further below.

PCBs

PCBs were reported above TOGS groundwater standards within AOC-17-9 at MW-56, MW-57, and MW-60 in February 2021. PCBs were not detected above TOGS groundwater standards downgradient at MW-57R (sampled May 2023, September 2023, November 2023, January 2024, and April 2024), MW-100S (sampled September 2023 and April 2024), MW-100I (sampled September 2023 and April 2024), and MW-58 (sampled February 2021, April 2021, and September 2023). PCB TOGS exceedances at MW-56 (0.59 µg/L), MW-57 (40.9 µg/L), and MW-60 (0.152 µg/L) were detected in samples collected between 17 and 18 February 2021. These samples were collected shortly after monitoring well installation between 28 January and 8 February 2021. PCBs were not reported above TOGS in any of the temporary monitoring wells installed. Elevated turbidity readings above 10 nephelometric turbidity units were observed during the February 2021 sampling event at MW-56 (**Appendix G**). Subsequent PCBs results at MW-56 were reported as non-detect in September 2023 and April 2024. Subsequent PCBs results at MW-57 and MW-60 were reported as non-detect in April 2021 and July 2022. Because subsequent sampling of these monitoring wells have been reported as non-detect and initial exceedances were not repeated, initial exceedances are indicative of a short-term bias caused by disturbance of the subsurface associated with the monitoring well construction. Monitoring well construction can increase turbidity and artificially elevate COPC concentrations through the desorption of constituents from soil particles and result in samples that are not representative of the aquifer. Subsequent sampling of MW-56, MW-57, and MW-60 has demonstrated that PCBs are below TOGS in the area monitored by these wells. PCB exceedances are attributed to short-term disturbance of subsurface conditions associated with well installation; therefore, further assessment is not warranted.

SVOCs

SVOCs were not detected above TOGS groundwater standards within AOC-17-9 for temporary or permanent monitoring well samples. SVOCs downgradient of AOC-17-9 at MW-57R (benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene) were detected above TOGS groundwater standards in May 2023. SVOC detections at MW-57R have been sporadic and nonrepeatable. SVOCs were not detected above TOGS groundwater standards at MW-57R for subsequent sampling events in November 2023, September 2023, January 2024, and April 2024. As further discussed in Section 6.2.3, the distribution of

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SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent. Therefore, additional investigation is not warranted.

AOC-17-9 Summary

AOC-17-9 is a possible former plating area located in the NAF (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-17-9 and to evaluate potential migration pathways in accordance with RI objectives.

PCBs, metals, and SVOCs were detected in soil above Restricted Residential SCOs. PCBs were detected above the Restricted Residential SCO up to 18 ft bgs, metals up to 14 ft bgs, and SVOCs up to 10 ft bgs. VOCs were not detected above Restricted Residential SCOs. Soils exceeding applicable SCOs are not confined to AOC-17-9 and extend beyond the limits of the AOC. Excavations within AOC-17-9 were completed up to 16 ft bgs (approximate depth to water table) as part of IRM #5A2. COPCs identified in soil within AOC-17-9 may be related to historic disposal activities but have been removed up to the water table by IRM #5A2 excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-17-9, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil for AOC-17-9 on the Revised BCP Site.

Metals and VOCs were not detected above TOGS groundwater standards within or downgradient of AOC-17-9. PCBs were detected above TOGS groundwater standards within AOC-17-9, and SVOCs were detected above TOGS groundwater standards downgradient. Exceedances of TOGS groundwater standards within or downgradient of AOC-17-9 are attributed to short-term disturbance of subsurface conditions associated with monitoring well installation (PCBs) or were sporadic and not reproducible (SVOCs). Accordingly, these exceedances are not considered to be primarily attributable to impacts at AOC-17-9 and indicate that soil to groundwater migration is limited.

5.2.27.2 AOC-17 - Rear Parking Lot (AOC-17-3)

AOC-17-3 is a former coal pile located in the Rear Parking Lot (**Figure 1-4**). Potential impacts to AOC-17-3 have been investigated through collection of soil and groundwater samples. A portion of AOC-17-3 extends beyond the Revised BCP boundary. Investigation findings and associated conclusions for the portion of AOC-17-3 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

Soil borings collected as part of the RI investigation of AOC-17-3 are compared to Restricted Residential SCO values on **Figures 5-13A-H** (0-16 ft bgs) and **5-15A-B** (16-20 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards in **Figures 5-14A-1**

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through **5-14D-2**. Excavations within AOC-17-3 were completed up to 14 ft bgs as part of IRM #2, as discussed in Section 3.2.2.

AOC-17-3 Soil

A total of 86 soil borings were installed within AOC-17-3 to a maximum depth of 18.07 ft bgs across multiple soil sample events (Section 2.2). Soil borings collected within AOC-17-3 include samples collected as part of the IRM #2 PDI, IRM #2 PDI Amendments #1-5, Addendum 4 to the Soil and Groundwater Investigation Work Plan EHS Building Area, and Addendum 6 to the Soil and Groundwater Investigation Work Plan. COPCs including PCBs, metals, and SVOCs were identified within AOC-17-3 above Restricted Residential SCOs. VOCs were not identified within AOC-17-3 above Restricted Residential SCOs.

PCBs above the Restricted Residential SCO were detected up to a depth of 14 ft bgs. Metals above the Restricted Residential or PoG SCO, including arsenic, chromium, copper, mercury, lead, nickel, and selenium, were detected up to a depth of 14 ft bgs. SVOCs above the Restricted Residential SCO, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene, were detected up to a depth of 6 ft bgs.

A summary of TSCA, Restricted Residential SCO, and PoG SCO exceedances found within AOC-17-3 are provided below. Excavations within AOC-17-3 were completed up to 14 ft bgs as part of IRM #2. Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples which have been excavated are noted.

PCBs

165 samples within AOC-17-3 were detected above the Restricted Residential SCO (>1 mg/kg) up to depths of 14 ft bgs. Due to the size of AOC-17-3 and number of exceedances, a detailed list of each sample is not provided in the text; however, a high-level summary is provided below by each respective COPC and SCO exceedance. 91 samples exceeded the PoG SCO (>3.2 mg/kg) but below TSCA level (>=50 mg/kg) up to depths of 14 ft bgs. 29 samples exceeded the TSCA level (>= 50 mg/kg) up to depths of 12 ft bgs. 102 of these 165 exceedances were excavated as part of IRM #2. The maximum concentration of PCBs detected within AOC-17-3 was 565 mg/kg at SSHS-B886-SUB-2-4. SSHS-B886-SUB-2-4 was excavated as part of IRM #2.

- A total of 29 samples collected within AOC-17-3 had PCBs detected above TSCA level (>=50 mg/kg). Concentrations ranged from 52 to 565 mg/kg from 0-12 ft bgs. 28 of the 29 samples were excavated during IRM #2. SSHS-B839-SUB-10-12 remains in place from 10-12 ft bgs with a concentration of 52 mg/kg.
- A total of 91 samples collected within AOC-17-3 had PCBs detected above the PoG SCO (>3.2 mg/kg) but below the TSCA level (>=50 mg/kg). Concentrations ranged from 3.34 to 49.3 mg/kg from 0-14 ft bgs. 60 of the 91 samples were excavated during IRM #2. Samples remaining in place above the PoG SCO are between 0.17-14 ft bgs and are further discussed in Section 6.
- A total of 45 samples within AOC-17-3 had PCBs detected above the Restricted Residential SCO (>1 mg/kg) but below the PoG SCO (>3.2 mg/kg). Concentrations ranged

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from 1.035 to 3 mg/kg from 0-14 ft bgs. 14 of the 45 samples were excavated during IRM #2. Samples remaining in place above the Restricted Residential SCO are between 2-14 ft bgs and are further discussed in Section 6.

Metals

- Arsenic – A total of 14 samples within AOC-17-3 had arsenic detected above the Restricted Residential SCO (>16 mg/kg) and PoG SCO (>16 mg/kg) from 0-14 ft bgs with concentrations ranging from 17 to 83 mg/kg. Four of the 14 samples were excavated during IRM #2. 10 samples detected above the Restricted Residential SCO (>16 mg/kg) and PoG SCO (>16 mg/kg) remain in place from 0.17 – 14 ft bgs with concentrations ranging from 17 to 61 mg/kg. The highest concentration of arsenic remaining in place is at SSHS-B542-SUB-10-12 at 61 mg/kg from 10-12 ft bgs.
- Chromium – No samples within AOC-17-3 had chromium (III+VI) detected above the Restricted Residential SCO (>110 mg/kg). A total of four samples (SSHS-SPA4-B5526-ELEV-844-842, SSHS-B1254-SUB-12-14, SSHS-B67-0.17-2, and SSHS-B67-2-6) within AOC-17-3 had chromium (III+VI) detected above the PoG SCO (>19 mg/kg) from 0-14 ft bgs with concentrations ranging from 20 to 47 mg/kg. Two of the four samples were excavated during IRM #2. SSHS-SPA4-B5526-ELEV-844-842 remains in place from 7.21-9.21 ft bgs with a concentration of 20 mg/kg. SSHS-B1254-SUB-12-14 remains in place from 12-14 ft bgs with a concentration of 24 mg/kg.
- Copper – One sample (SSHS-B67-0.17-2) within AOC-17-3 had copper detected above the Restricted Residential SCO (>270 mg/kg) from 0-2 ft bgs. No samples within AOC-17-3 had copper detected above PoG SCO (>1,720 mg/kg). The concentration of copper was 980 mg/kg at SSHS-B67-0.17-2. This sample was excavated during IRM #2.
- Lead – A total of three samples (SSHS-B542-SUB-10-12, SSHS-B542-SUB-8-10, and SSHS-B67-0.17-2) within AOC-17-3 had lead detected above the Restricted Residential SCO (>400 mg/kg) and PoG SCO (>450 mg/kg) from 0-2 and 8-12 ft bgs with concentrations ranging from 590 to 36,000 mg/kg. Two of the three samples were excavated during IRM #2. SSHS-B542-SUB-10-12 remains in place from 10-12 ft bgs with a concentration of 2,100 mg/kg.
- Mercury – One sample (SSHS-B67-2-6) within AOC-17-3 had mercury detected above the Restricted Residential SCO (>0.81 mg/kg) and PoG SCO (>0.73 mg/kg) from 2-6 ft bgs. The concentration of mercury was 0.85 mg/kg at SSHS-B67-2-6. The sample was excavated during IRM #2.
- Nickel – One sample (SSHS-B67-0.17-2) within AOC-17-3 had nickel detected above the Restricted Residential SCO (>310 mg/kg) and PoG SCO (>130 mg/kg) from 0-2 ft bgs with a concentration of 870 mg/kg. One sample (SSHS-B67-2-6) had nickel detected above the PoG SCO (>130 mg/kg) but below the Restricted Residential SCO (>310 mg/kg) from 2-6 ft bgs with a concentration of 160 mg/kg. These two samples were excavated during IRM #2.

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- Selenium – No samples within AOC-17-3 had selenium detected above the Restricted Residential SCO (>180 mg/kg). Two samples (SSHS-B542-SUB-8-10 and SSHS-B67-2-6) within AOC-17-3 had selenium detected above the PoG SCO (>4 mg/kg) from 2-10 ft bgs with concentrations ranging from 5.1 to 12 mg/kg. These two samples were excavated during IRM #2.

SVOCs

- Benz(a)anthracene – One sample (SSHS-B67-2-6) within AOC-17-3 had benz(a)anthracene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1 mg/kg) from 2-6 ft bgs. The concentration of benz(a)anthracene was 1.8 mg/kg at SSHS-B67-2-6. This sample was excavated during IRM #2.
- Benzo(a)pyrene – One sample (SSHS-B67-2-6) within AOC-17-3 had benzo(a)pyrene detected above the Restricted Residential SCO (>1 mg/kg) from 2-6 ft bgs. No samples within AOC-17-3 had benzo(a)pyrene detected above the PoG SCO (>22 mg/kg). The concentration of benzo(a)pyrene was 1.6 mg/kg at SSHS-B67-2-6. This sample was excavated during IRM #2.
- Benzo(b)fluoranthene – One sample (SSHS-B67-2-6) within AOC-17-3 had benzo(b)fluoranthene detected above the Restricted Residential SCO (>1 mg/kg) and PoG SCO (>1.7 mg/kg) from 2-6 ft bgs. The concentration of benzo(b)fluoranthene was 1.8 mg/kg at SSHS-B67-2-6. The sample was excavated during IRM #2.
- Chrysene – No samples within AOC-17-3 had chrysene detected above the Restricted Residential SCO (>3.9 mg/kg). One sample (SSHS-B67-2-6) within AOC-17-3 had chrysene detected above the PoG SCO (>1 mg/kg) from 2-6 ft bgs. The concentration of chrysene was 1.8 mg/kg at SSHS-B67-2-6. This sample was excavated during IRM #2.
- Indeno(1,2,3-cd)pyrene – One sample (SSHS-B67-2-6) within AOC-17-3 had indeno(1,2,3-cd)pyrene detected above the Restricted Residential SCO (>0.5 mg/kg) from 2-6 ft bgs. No samples within AOC-17-3 had indeno(1,2,3-cd)pyrene detected above the PoG SCO (>8.2 mg/kg). The concentration of indeno(1,2,3-cd)pyrene was 1.1 mg/kg at SSHS-B67-2-6. This sample was excavated during IRM #2.

The nature and extent of COPCs remaining in place in the Rear Parking Lot, including AOC-17-3, is presented in Section 6.3.4. The nature and extent discussed in Section 6.3.4 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-17-3. Restricted Residential SCO exceedances remaining in place have been delineated laterally to the extent practicable. In areas where impacts extend to or are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054, as discussed in Section 6.

AOC-17-3 Groundwater

Potential impacts of AOC-17-3 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring wells installed within AOC-17-3 include MW-46, MW-70S, MW-70I, and MW-73I. Temporary monitoring wells

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installed within AOC-17-3 include B23 which was analyzed for metals, SVOCs, and VOCs. Monitoring wells downgradient of AOC-17-3 include MW-42 and MW-82S. Temporary monitoring wells downgradient of AOC-17-3 include B4154I and B4154S which were both analyzed for PCBs, metals, SVOCs, and VOCs. Groundwater samples collected as part of the RI investigation of AOC-17-3 were analyzed for PCBs, metals, SVOCs, and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-14A-1** through **5-14D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs and VOCs were not detected above TOGS groundwater standards within or downgradient of AOC-17-3.

Metals

Chromium (86.9 µg/L), lead (181 µg/L), and nickel (144 µg/L) were detected at concentrations above TOGS at temporary monitoring well B23 within AOC-17-3 in May 2000. These TOGS exceedances were not reproduced during subsequent sampling events at adjacent monitoring wells MW-73S and MW-73I and downgradient at MW-70S and MW-70I.

As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of metals exceedances in the adjacent and downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in the temporary monitoring well sample. Therefore, additional investigation is not warranted.

SVOCs

SVOCs, including benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno (1,2,3-cd)pyrene, were detected above TOGS groundwater standards within AOC-17-3 at MW-70S, MW-73S, and MW-73I in October 2021. SVOCs were non-detect during the prior sampling event in September 2021 at MW-70S, MW-73S, and MW-73I and were non-detect during subsequent sampling events in May 2023 (MW-70S), September 2023 (MW-70S), and April 2024 (MW-70S, MW-73S, and MW-73I). SVOCs were not reported above TOGS groundwater standards downgradient of AOC-17-3 at B4154S and B4154I. As further discussed in Section 6.2.3, the distribution of SVOC exceedances across the Site has been sporadic, non-repeatable, and spatially inconsistent. Therefore, additional investigation is not warranted.

AOC-17-3 Summary

AOC-17-3 is a former coal pile located in the Rear Parking Lot (**Figure 1-4**). This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs, metals, SVOCs, and VOCs. The soil and groundwater data collected are

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sufficient to evaluate the nature and extent of AOC-17-3 and to evaluate potential migration pathways in accordance with RI objectives.

PCBs, SVOCs, and metals were detected in soil above Restricted Residential SCOs. PCBs and metals were detected above Restricted Residential SCOs up to 14 ft bgs and SVOCs up to 6 ft bgs. VOCs were not detected above Restricted Residential SCOs. Soils exceeding applicable SCOs are not confined to AOC-17-3 and extend beyond the limits of the AOC. Excavations within AOC-17-3 were completed up to 14 ft bgs as part of IRM #2. COPCs identified in soil within AOC-17-3 may be related to historic disposal activities but have been removed by IRM #2 excavations except at locations noted above. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards.

Section 6.3.4 presents the nature and extent of COPCs remaining in place within the Rear Parking Lot, including AOC-17-3, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. As discussed in Section 6.3.4, no further assessment is warranted to define the nature and extent of impacts in soil for AOC-17-3 on the Revised BCP Site.

PCBs and VOCs were not detected above TOGS groundwater standards within or downgradient of AOC-17-3. Metals were detected above TOGS groundwater standards in temporary monitoring wells within AOC-17-3. Metals were not reported above TOGS groundwater standards in adjacent and downgradient permanent monitoring wells. The absence of metals exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. SVOCs detected above TOGS groundwater standards within AOC-17-3 were sporadic and not reproducible. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

5.2.27.3 AOC-17 - EHS Building (AOC-17-4, AOC-17-5, AOC-17-6, AOC-17-7, AOC-17-8)

Portions of AOC-17 located within the footprint of the EHS Building (AOC-1) include an acid drainage pit located under the Gymnasium of the EHS building (AOC-17-8), and four former potential disposal areas (AOC-17-4, AOC-17-5, AOC-17-6, and AOC-17-7) (**Figure 1-4**). AOC-17-4, AOC-17-5, and AOC-17-6 are located under the F-Wing of the EHS building area. AOC-17-8 is located under the Gymnasium of the EHS building area. A small portion of AOC-17-7 is located under the K-Wing of the EHS Building area. Investigation findings and associated conclusions for AOC-17-7 located outside of the Revised BCP Site will be completed and discussed in the #c808054 RI/AA.

Multiple AOCs are located within or overlap AOC-17 within the EHS Building.

- AOC-9-2, AOC-11, AOC-12-3, and AOC-13 are located within AOC-17-4. AOC-2, AOC-3, AOC-10D-6, AOC-16-1, and AOC-18-1 overlap AOC-17-4.
- AOC-3, AOC-10D-5, and AOC-10D-6 overlap AOC-17-6.
- AOC-5-1, AOC-5-2, AOC-5-4, AOC-10D-5, and AOC-10D-6 overlap AOC-17-5.

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- AOC-2, AOC-3, AOC-4, AOC-11, AOC-11B, AOC-10D-2, and AOC-10D-3 overlap AOC-17-7.

- AOC-2E is located within AOC-17-8. AOC-10D, AOC-10D-2, and AOC-4 overlap AOC-17-8.

The media of concern associated with AOC-17 as per the 2019 RI Work Plan included soil; however, due to physical constraints of sampling beneath the EHS building, the AOC was further evaluated through downgradient groundwater and sub-slab vapor sampling discussed below. Soil borings collected under the EHS Building prior to the construction of K-Wing within AOC-17-7 are shown compared to Restricted Residential SCOs on **Figures 5-1A-B** (0-4 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2**. Sub-slab vapor analytical results are screened against NYSDOH Matrix Guidelines on **Figure 5-3A-F**.

AOC-17-7 EHS Building Soil

One soil sample, SSHS-B3SS, was collected within AOC-17-7 from 0-2.5 ft bgs in June 2008 prior to the construction of the K-Wing of the EHS Building as shown on **Figures 5-1A-B**. This sample was analyzed for PCBs, VOCs, metals, and SVOCs. PCBs were detected above the Restricted Residential SCO 0-2 ft bgs at 14 mg/kg. Metals, SVOCs, and VOCs were not detected above Restricted Residential SCOs.

It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold.

As additional soil investigation beneath the EHS building was not feasible, the depth of these features relative to the water table (approximately 16 ft bgs) or the presence of COPCs in soil within the portions of AOC-17 underlying the school building are unknown. While the presence of the EHS building slab reduces the potential for stormwater infiltration through portions of this AOC, the feature had the potential to have resulted in release of COPCs to underlying soil. Impacts to groundwater have been assessed through groundwater investigations at the perimeter of the EHS building.

AOC-17 EHS Building Groundwater – AOC-17-4, AOC-17-5, and AOC-17-6 (F-Wing of EHS Building)

Potential impacts of AOC-17-4, AOC-17-5, and AOC-17-6 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of these AOCs, outside of the EHS Building. Monitoring well MW-83I and temporary monitoring wells B93 (analyzed for VOCs), B94 (analyzed for VOCs), B95 (analyzed for VOCs), B96 (analyzed for VOCs), B97 (analyzed for VOCs), B3202A (analyzed for VOCs), B3202B (analyzed for VOCs), B3203A (analyzed for PCBs, metals, SVOCs, and VOCs), B3203B (analyzed for VOCs), B3204A

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(analyzed for VOCs), and B3204B (analyzed for VOCs), were installed within AOC-17-4. Monitoring wells located downgradient of AOC-17-4, AOC-17-5, and AOC-17-6 include MW-47, MW-47I, MW-90S, MW-90I, MW-91S and MW-91I. Results are shown compared to TOGS groundwater standards on **Figures 5-2A-1** through **5-2D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8, 5-9, 5-10**, and **5-11**, for PCBs, metals, SVOCs, and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs, metals, and SVOCs were not detected above TOGS groundwater standards within or downgradient of AOC-17-4, AOC-17-5, and AOC-17-6.

VOCs

MW-47I located downgradient of AOC-17-4 exceeded the TOGS groundwater standard for benzene (1.5 µg/L compared to TOGS of 1 µg/L) in September 2021. Benzene was non-detect at MW-47I in samples collected in October 2021 and April 2024. Therefore, further investigation is not warranted. TCE was detected above the TOGS groundwater standard (5 µg/L) at B92 (5.6 µg/L) and B94 (8.9 µg/L) in August 2014. TCE was detected below TOGS groundwater standards at adjacent monitoring well MW-47 in September 2016 (3.9 µg/L) and non-detect in February 2021 and July 2021. TCE was non-detect at MW-47I in September 2021, October 2021, and April 2024. As temporary monitoring wells are installed for short-term investigation purposes and are typically sampled shortly after installation, the resulting data may reflect localized disturbance, incomplete equilibration, and short-term turbidity-related influences that can bias reported groundwater concentrations. In contrast, permanent monitoring wells provide a more reliable measure of ambient groundwater quality and dissolved-phase conditions within the aquifer as they are designed, developed, and sampled to better represent stable formation water over time. Accordingly, the absence of TCE exceedances in the adjacent permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. Therefore, additional investigation is not warranted.

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AOC-17 EHS Building Groundwater – AOC-17-8 (Gymnasium of EHS Building)

Potential impacts of AOC-17-8 on groundwater quality was evaluated using samples collected from monitoring wells located downgradient of this AOC, outside of the EHS Building. Monitoring wells MW-85I, MW-13, MW-88S, and MW-88I and temporary monitoring well B29-A (analyzed for PCBs, SVOCs, and VOCs) were installed downgradient of AOC-17-8. PCBs, metals, SVOCs, and VOCs were not detected above TOGS groundwater standards at these monitoring wells.

AOC-17 EHS Building Sub-Slab Soil Vapor

The potential for VOCs to migrate into indoor air has been assessed through previous sub-slab soil vapor investigation. Sub-slab vapor analytical results are presented in **Table 5-2** screened against NYSDOH Matrix Guidelines for sub-slab vapor. Sample locations are shown on **Figure 5-3A-F**. Sub-slab vapor samples were collected within AOC-17-4 (SSHS-04-SS, SSHS-05-SS, SSHS-06-SS, SSHS-07-SS, SSHS-12-SS, SS-122, and SS-120), AOC-17-5 (SS-133, SSHS-08-SS, SSHS-09-SS, and SSHS-10-SS), AOC-17-8 (SSHS-22-SS) and adjacent to AOC-17-6 (SSHS-01-SS).

TCE was detected above NYSDOH Matrix Guidelines for sub-slab vapor at SSHS-04-SS (390 µg/m^3) and SSHS-05-SS (2,100 µg/m^3) within AOC-17-4. TCE was detected below NYSDOH Matrix Guidelines for sub-slab vapor collected within AOC-17-5 and AOC-17-8 and adjacent to AOC-17-6.

VOCs detected in sub-slab vapor above NYSDOH guidelines have been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. TCE effluent concentrations for the F-Wing area (portion of EHS building located above AOC-17-4 and AOC-17-5) decreased between June 2018 and July 2021, increased in December 2021, slightly decreased in November 2023 and 2024, then slightly increased in November 2025 as shown on **Figure 6V-1B**. This indicates that TCE is still present in sub-slab vapor beneath the EHS Building and may potentially be associated with AOC-17-4.

The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e). See AOC-1 (Section 5.2.1 to 5.2.3) for additional information on indoor air and soil vapor investigations. The current nature and extent of VOCs in indoor air is discussed in Section 6.1.2.

AOC-17 EHS Building Summary

Portions of AOC-17 located within the footprint of the EHS Building (AOC-1) include an acid drainage pit (AOC-17-8) and four former potential disposal areas (AOC-17-4, AOC-17-5, AOC-17-6, and AOC-17-7). Due to physical constraints associated with the EHS building, direct subsurface investigation beneath the structure is not currently practicable. Accordingly, the nature and extent of impacts beneath the EHS Building were evaluated using multiple lines of evidence, including sub-slab vapor sampling data and groundwater data collected within and downgradient of the AOCs, outside of the EHS building footprint.

One soil sample, SSHS-B3SS, was collected within AOC-17-7 from 0-2.5 ft bgs in June 2008 prior to the construction of the K-Wing of the EHS Building. SSHS-B3SS was analyzed for PCBs, metals, SVOCs, and VOCs. PCBs were detected above the Restricted Residential SCO 0-2 ft bgs. Metals, SVOCs, and VOCs were not detected above Restricted Residential SCOs.

PCBs, metals and SVOCs were not detected in groundwater above TOGS standards within or downgradient of the portions of AOC-17 located within the footprint of the EHS building. Benzene was reported above TOGS groundwater standards at MW-47I downgradient of AOC-17-4 but was not repeated. TCE was detected above TOGS groundwater standards at temporary monitoring wells B94 located within AOC-17-4 and B92 located downgradient of AOC-17-4 but not detected above TOGS groundwater standards at adjacent monitoring wells MW-47 and MW-47I. The absence of TCE exceedances in the downgradient permanent monitoring wells is considered more representative of actual aquifer conditions than the isolated exceedances reported in temporary monitoring well samples. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

TCE was detected above NYSDOH Matrix Guidelines for sub-slab vapor at sample locations collected within AOC-17-4. VOCs detected in sub-slab vapor above NYSDOH guidelines have

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been mitigated by the installation of sub-slab vapor mitigation systems described in Section 3.1. The potential for VI has been assessed beneath the EHS building and is currently not considered a complete exposure pathway (Geosyntec, 2019e).

Given current building constraints, additional soil investigation beneath the EHS Building is not practicable at this time. As discussed in Section 9, the proposed Track 4 remedy will include institutional and engineering controls (ECs), including continued operation and maintenance of the vapor mitigation system and provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible. Therefore, no further investigation is warranted at this time, and the portions of AOC-17 located under the EHS are proposed to be managed under the Track 4 remedy.

5.2.28 AOC-18 (TCE Impacted Soils)

AOC-18 is located within the New BCP Site. Investigation findings and conclusions for this AOC located outside of the Revised BCP Site will be documented under the RI for the New BCP Site.

5.2.29 AOC-19 (Former Drum Nest Area)

AOC-19 is the former drum nest area and is located in the NAF (**Figure 1-4**). AOC-19 spatially overlaps AOC-16-3 and was originally identified following the December 2019 soil investigation event, based on elevated COPC concentrations detected in soils. The former drum nest area was encountered during implementation of IRM activities in the NAF on 5 January 2022. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-19 includes soil and groundwater. COPCs associated with AOC-19 are PCBs and VOCs.

Potential releases of COPCs in underlying soil due to the former drum nest have been investigated at this AOC. Soil borings collected as part of the RI investigation of AOC-19 are shown compared to Restricted Residential SCO values on **Figures 5-4A-H** (0-16 ft bgs) and **5-6A-T** (16-56 ft bgs). Groundwater samples are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2**. Excavations within AOC-19 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM #5A2.

Soil and groundwater sampling associated with AOC-19 have been sufficiently investigated to achieve the RI objectives provided in Section 1.5. PCBs and VOCs were identified within AOC-19 above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary and are discussed in Section 6. COPCs above applicable SCOs present within AOC-19 have been delineated vertically to the silty clay aquitard. PCBs and VOCs were detected above TOGS groundwater standards within and downgradient of AOC-19. A summary is presented below, including investigations completed, analytical results, and findings.

<u>AOC-19 Soil</u>

A total of 30 soil borings were installed within AOC-19 to a maximum depth of 30 ft bgs across multiple soil sampling events (Section 2.2). COPCs, including PCBs and VOCs, were identified within AOC-19 above Restricted Residential SCOs.

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PCBs above the Restricted Residential SCO were detected within AOC-19 up to a depth of 24 ft bgs. PCBs exceeded the Restricted Residential SCOs at B3920 collected adjacent to AOC-19 up to a depth of 32 ft bgs. VOCs above the Restricted Residential SCOs, including PCE and TCE, were detected up to a depth of 24 ft bgs within AOC-19. VOCs exceeded the Restricted Residential SCOs at B3920 collected adjacent to AOC-19 up to a depth of 28 ft bgs.

As part of initial sampling in the NAF in August 2019, soil samples were collected on an approximate 60 x 60 ft grid and extended from the ground surface to the water table, approximately 14-16 ft bgs. Samples were analyzed for PCBs and metals at each interval and soil boring location. Samples were also analyzed for VOCs, SVOCs, and TPH at 0.17-2 ft bgs and the last 2 ft interval before encountering the water table, which was typically observed at 14-16 ft bgs. Soil borings installed to further investigate the AOC-19 area in August 2019 include B3003, B3011-B3018, B3025-B3030, and B3038-B3045.

Additional step out borings were collected in December 2019 to further delineate COPCs in soil in the NAF. These borings progressed beyond the water table at 16 ft bgs. Borings in the AOC-19 area during the December 2019 sampling event include B3264-B3268. These samples were analyzed for a combination of PCBs, metals, SVOCs and VOCs.

Following the December 2019 sampling event, based on elevated COPC concentrations detected in soil, AOC-19 was established as a Site AOC. Elevated COPCs at AOC-19 indicated that it was former location where COPCs were suspected to have been discharged, which is considered a potential source area.

To provide further horizontal and vertical delineation of COPCs in soils, additional soil borings were installed in January 2021. Borings installed in the AOC-19 area during the January 2021 sampling event include B3015A, B3264A, B3265A, B3266A, B3454, B3455, B3493, and B3554. These borings were analyzed for a combination of PCBs, VOCs, SVOCs, metals, and emerging contaminants.

To further characterize the nature of soils below the water table, soil borings were installed from the water table to the silty clay aquitard in the NAF and AOC-19 area in May 2021. Borings installed in the AOC-19 area during the May 2021 sampling event include B3019, B3020, B3882, B3883, B3884, B3886, B3889, B3914, and B3915. These borings were analyzed for PCBs, and at select locations, VOCs, SVOCs, Metals, and emerging contaminants.

In October 2021, additional soil characterization in the AOC-19 area was conducted with the goal to further evaluate the extent of VOCs above the PoG SCOs. A total of 8 soil borings, B3454A, B3920A, and B4260-B4265 were installed as part of this AOC-19 VOC sampling event. Samples were generally collected from 20-28 ft bgs, with samples at B4264 collected from ground surface to 28 ft bgs.

On 5 January 2022, drums were encountered in the IRM #5A2 excavation (2-4 ft bgs) in AOC-19. An odor was detected, and a black liquid was observed. PID measurements greater than 100 ppm

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were observed within the odorous and stained area. Samples of the drum contents and surrounding soils were collected and submitted for laboratory analyses, and the area was secured with a tarp during the period of the investigation. Detections in the drum contents included PCBs (22 mg/kg), benzene (25 mg/kg), ethylbenzene (45 mg/kg), toluene (270 mg/kg), total xylenes (330 mg/kg), naphthalene (38 mg/kg), and lead (190 mg/kg). PCBs were detected in surrounding soils at 22,000 mg/kg. VOCs detected in the surrounding soils included benzene (0.60 mg/L) and TCE (1.2 mg/L). The drums and surrounding soils were managed in accordance with IRM #5A2 Addendum #1, relocated and staged for transport and disposal in accordance with IRM #5A2 Addendum #3, and transported for disposal in accordance with IRM #5A2 Addendum #5. Soil impacts associated with AOC-19 were removed with excavation to the water table during IRM #5A2.

A summary of soil exceedances found within AOC-19 is provided below. Excavations within AOC-19 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM #5A2. Restricted Residential SCO exceedances remaining in place following the IRM are discussed in Section 6. Samples which have been excavated are noted.

PCBs

- The following soil boring samples within AOC-19 had PCBs detected above TSCA level (>= 50 mg/kg):
    - SSHS-B3264-SUB-14-16 (266 mg/kg) – Remaining in place
    - SSHS-B3264A-SUB-16-18 (65.1 mg/kg) – Remaining in place
    - SSHS-B3265-SUB-12-14 (612 mg/kg) – Excavated
    - SSHS-B3265A-SUB-10-12 (306.7 mg/kg) – Excavated
    - SSHS-B3265A-SUB-8-10 (132.2 mg/kg) – Excavated
    - SSHS-B3266-SUB-14-16 (156 mg/kg) – Remaining in place
    - SSHS-B3266A-SUB-16-18 (117.4 mg/kg) – Remaining in place
    - SSHS-B3454-SUB-16-18 (2,011 mg/kg) – Remaining in place
    - SSHS-B3454-SUB-18-20 (844 mg/kg) – Remaining in place
    - SSHS-B3454-SUB-22-24 (13,000 mg/kg) – Remaining in place
- The following soil boring samples within AOC-19 had PCBs detected above the PoG SCO (>3.2 mg/kg):
    - SSHS-B3027-SUB-12-14 (44 mg/kg) – Excavated
    - SSHS-B3264A-SUB-18-20 (4.17 mg/kg) – Remaining in place
    - SSHS-B3264A-SUB-20-22 (9.89 mg/kg) – Remaining in place
    - SSHS-B3266-SUB-12-14 (25.06 mg/kg) – Remaining in place
    - SSHS-B3266A-SUB-10-12 (17.61 mg/kg) – Excavated
    - SSHS-B3454-SUB-20-22 (26.44 mg/kg) – Remaining in place

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  - SSHS-B3454-SUB-14-16 (4.38 mg/kg) – Remaining in place
  - DUP-8; SSHS-B3454-SUB-10-12 (42.58 mg/kg) – Excavated
  - SSHS-B3454-SUB-12-14 (30.2 mg/kg) – Excavated
  - SSHS-B3455-SUB-14-16 (17.05 mg/kg) – Remaining in place

- The following soil boring samples within AOC-19 had PCBs detected above the Restricted Residential SCO (>1 mg/kg):
  - SSHS-B3015-SUB-12-14 (1.691 mg/kg) – Excavated
  - SSHS-B3015A-SUB-14-16 (2.79 mg/kg) – Remaining in place
  - SSHS-B3015A-SUB-16-18 (1.913 mg/kg) – Remaining in place
  - SSHS-B3264A-SUB-22-24 (2.338 mg/kg) – Remaining in place
  - SSHS-B3265-SUB-14-16 (1.094 mg/kg) – Remaining in place
  - SSHS-B3265A-SUB-16-18 (1.294 mg/kg) – Remaining in place
  - SSHS-B3265A-SUB-4-6 (1.15 mg/kg) – Excavated
  - SSHS-B3266A-SUB-20-22 (2.173 mg/kg) – Remaining in place
  - SSHS-B3267-SUB-12-14 (1.364 mg/kg) – Remaining in place
  - SSHS-B3455-SUB-10-12 (2.988 mg/kg) – Remaining in place
  - SSHS-B3455-SUB-12-14 (2.735 mg/kg) – Remaining in place
  - SSHS-B3455-SUB-16-18 (1.74 mg/kg) – Remaining in place
  - SSHS-B3493-SUB-12-14 (1.308 mg/kg) – Remaining in place
  - SSHS-B3493-SUB-14-16 (1.771 mg/kg) – Remaining in place

VOCs

- PCE – One sample (SSHS-B3454-SUB-22-24) within AOC-19 had PCE detected above the Restricted Residential SCO (>19 mg/kg) and PoG SCO (>1.3 mg/kg) from 22-24 ft bgs at 40 mg/kg. This sample remains in place below the water table.

- Toluene – No samples within AOC-19 had toluene detected above the Restricted Residential SCO (>100 mg/kg). One sample (SSHS-B3454-SUB-22-24) within AOC-19 had toluene detected above the PoG SCO (>0.7 mg/kg), but not the Restricted Residential SCO (>100 mg/kg), from 22-24 ft bgs at 2 mg/kg. This sample remains in place below the water table.

- TCE – One sample (SSHS-B3454-SUB-22-24) within AOC-19 had TCE detected above the Restricted Residential SCO (>21 mg/kg) and PoG SCO (>0.47 mg/kg) from 22-24 ft bgs with a concentration of 25 mg/kg. One sample (SSHS-B3454A-SUB-24-26) within AOC-19 had TCE detected above the PoG SCO (>0.47 mg/kg), but not the Restricted

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Residential SCO (>21 mg/kg), from 24-26 ft bgs with a concentration of 2.5 mg/kg. These two samples remain in place below the water table.

- Xylenes – No samples within AOC-19 had xylenes detected above the Restricted Residential SCO (>100 mg/kg). One sample (SSHS-B3454-SUB-22-24) within AOC-19 had xylenes detected above the PoG SCO (>1.6 mg/kg), but not the Restricted Residential SCO (>100 mg/kg), from 22-24 ft bgs at 8.8 mg/kg. This sample remains in place below the water table.

The nature and extent of COPCs remaining in place in the NAF, including AOC-19, is presented in Section 6.3.1. The nature and extent discussed in Section 6.3.1 includes IRM samples remaining in place and a discussion of lateral and vertical delineation of COPCs identified within AOC-19.

AOC-19 Groundwater

Potential impacts of AOC-19 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of this AOC. Monitoring well MW-52 and temporary wells B3883 (PCBs) and B3886 (PCBs, VOCs) were installed within AOC-19. Monitoring wells MW-51, MW-106 are located downgradient. MW-50S and MW-50I are located cross-gradient of AOC-19 to the north. Groundwater samples collected as part of the RI investigation of AOC-19 included analysis for PCBs and VOCs. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented in **Tables 5-8** and **5-11,** for PCBs and VOCs, respectively, and are compared to TOGS groundwater standards. PCBs and VOCs were detected above TOGS groundwater standards within and downgradient of AOC-19.

PCBs

PCB concentrations downgradient of AOC-19 at MW-52, MW-51, MW-96, and MW-106 and crossgradient of AOC-19 at MW-50S and MW-50I have been detected above TOGS groundwater standards. Relative to the area of PCB exceedances of TOGS groundwater standards, MW-50S, MW-50I, and MW-52 are located hydraulically upgradient, with MW-51 and MW-106 downgradient, and MW-96 downgradient of MW-51 and MW-106. Former monitoring wells MW-50S, MW-50I, and MW-52 characterize the upgradient extent of PCBs in this area. These monitoring wells were sampled in February and April 2021. These locations were detected above the TOGS groundwater standard for PCBs in April 2021 (concentrations of 2.3 µg/L, 0.14 µg/L and 7.6 µg/L, respectively). The maximum concentration of PCBs at MW-50S, MW-50I, and MW-52 was 2.3 µg/L in April 2021, 0.14 µg/L in April 2021, and 12.5 µg/L in February 2021, respectively. MW-50S, MW-50I, and MW-52 were decommissioned as part of IRM #5A2 in December 2021. MW-96 and MW-108 are located off-Site, outside the Revised BCP Site boundary but discussed here to inform evaluation of the nature and extent of PCBs in groundwater downgradient of AOC-19. PCBs were detected above TOGS groundwater standards off-Site at MW-96, with a maximum concentration of 0.69 µg/L in January 2024. MW-108 was sampled in July 2025 and November 2025 with PCB concentrations as non-detect in July 2025 and 0.012 µg/L in November 2025. MW-108 defines the downgradient extent of PCB impacts in groundwater

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associated with AOC-19. PCB concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2 as further discussed in Section 6.2.1.

VOCs

VOC concentrations at MW-50S, MW-50I, MW-51, and MW-96 have been detected above TOGS groundwater standards. MW-50S and MW-50I are located cross gradient from AOC-19 to the north. MW-50S and MW-50I were sampled twice for VOCs in February 2021 and April 2021. In February 2021 TCE was detected above TOGS groundwater standard of 5 µg/L at MW-50I (6.5 µg/L) and below TOGS groundwater standards at MW-50S (4.4 µg/L). In April 2021 TCE was detected above TOGS groundwater standards at MW-50S (6.4 µg/L) and below TOGS groundwater standards at MW-50I (4.3 µg/L). MW-50S and MW-50I were decommissioned as part of IRM #5A2 in December 2021. MW-51 is located downgradient of AOC-19 and approximately 100 feet downgradient of MW-50S and MW-50I. VOCs have been sampled at MW-51 as part of seven sampling events in February 2021, April 2021, May 2023, September 2023, November 2023, January 2024, and April 2024. Acetone, Freon 113, PCE, and TCE were detected above TOGS groundwater standards at MW-51. MW-96 is located off-Site outside the Revised BCP Site boundary, approximately 135 feet downgradient of MW-51. VOCs have been sampled at MW-96 as part of five sampling events in May 2023, September 2023, November 2023, January 2024, and April 2024. Freon 113 and TCE were detected above TOGS groundwater standards at MW-96. MW-108 is located off-Site, approximately 760 ft east (downgradient) of MW-96. MW-108 is located outside the Revised BCP Site Boundary but is included in this discussion to inform evaluation of the nature and extent of VOCs in groundwater downgradient of AOC-19. MW-108 was sampled in July 2025 with VOC concentrations non-detect. MW-108 defines the downgradient extent of VOC impacts in groundwater associated with AOC-19. VOC concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A as further discussed in Section 6.2.4.

AOC-19 Summary

AOC-19 is the former drum nest area and is located in the NAF (**Figure 1-4**). AOC-19 was originally identified following the December 2019 soil investigation event, based on elevated COPC concentrations detected in soils. This AOC was investigated through the collection of soil and groundwater samples targeting potential releases of COPCs, including PCBs and VOCs. The soil and groundwater data collected are sufficient to evaluate the nature and extent of AOC-19 and to evaluate potential migration pathways in accordance with RI objectives.

PCBs and VOCs were detected in soil above Restricted Residential SCOs. PCBs were detected above the Restricted Residential SCO up to 24 ft bgs and VOCs up to 24 ft bgs. Adjacent to AOC-19, PCBs were detected above the Restricted Residential SCO up to 32 ft bgs and VOCs up to 28 ft bgs. Soils exceeding applicable SCOs are not confined to AOC-19 and extend beyond the limits of the AOC. COPCs identified within AOC-19 are primarily attributed to the drum nest encountered in the NAF on 5 January 2022, which was removed as part of IRM #5A2. Excavations within AOC-19 were completed up to 16 ft bgs (approximate depth of water table) as part of IRM

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#5A2. COPCs identified in soil within AOC-19 have been removed up to the water table by IRM #5A2 excavations except at locations noted above.

Section 6.3.1 presents the nature and extent of COPCs remaining in place within the NAF, including AOC-19, and includes evaluation of IRM confirmation data as well as lateral and vertical delineation of COPCs identified within the AOC. The vertical and lateral extent of AOC-19 has been defined in soil and groundwater as part of the RI for #c808022. As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil for AOC-19 on the Revised BCP Site.

PCBs and VOCs were detected above TOGS groundwater standards within and downgradient of AOC-19. The lateral extent of PCB and VOC impacts in groundwater are defined off-Site. PCB and VOC concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

5.2.30 AOC-20 (Historic Water Line)

AOC-20 is a historical water line area where confirmation samples during IRM #5A2 detected concentrations of mercury up to 200 mg/kg and lead up to 6,100 mg/kg during excavation along the eastern property line of the NAF (**Figure 1-4**). AOC-20 spatially overlaps AOC-3A-1. As AOC-20 was identified during IRM #5A2, no pre-IRM investigation activities were completed for this AOC. Potential releases of COPCs to underlying soil due to this historical feature have been investigated at this AOC. As per the 2019 RI Work Plan (Geosyntec, 2019a), media of concern associated with AOC-20 includes soil and groundwater. The COPC associated with AOC-20 is metals.

Soil and groundwater associated with AOC-20 has been sufficiently investigated to achieve the RI objectives provided in Section 1.5. Restricted Residential SCO exceedances remaining in place are horizontally delineated or inferred to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COPCs above Restricted Residential SCOs present within AOC-20 have been delineated vertically.

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AOC-20 Soil

Soil cover verification samples were collected along the eastern property line of the NAF in order to leave native material in place. This was in part to keep the structural integrity of the permanent fence in place. Results from this sampling within AOC-20 indicated concentrations above Restricted Residential SCOs for mercury where the highest concentrations were reported at SCV44-0.17-0.75 (10 mg/kg), SCV49-0.17-0.75 (9.3 mg/kg), SCV49-0.75-1.75 (22 mg/kg) with corresponding duplicate sample (63 mg/kg), SCV50-0-0.58 (220 mg/kg), and SCV50-0.58-1.58

(120 mg/kg). Lead concentrations above Restricted Residential SCOs were reported as high as 4,800 mg/kg at SCV54-0.17-0.75.

Additional samples were collected in three separate locations (two valves and one pipe sample) in July 2023 where a historical waterline and associated pipe valves were observed during IRM #5A2 believed to correlate with the elevated metals concentrations identified along the eastern property line (WLV1, WLV2, and WLP). Metals concentrations for the two waterline valve samples were detected above Restricted Residential SCOs for arsenic (150-160 mg/kg), cadmium (27 mg/kg), chromium (190-220 mg/kg), copper (530 mg/kg), manganese (4,000-4,900 mg/kg), and nickel (750 mg/kg). The water line pipe sample was collected from the physical pipe, co-located with the highest concentrations mercury concentrations identified in soil at SCV50 listed above. Mercury concentrations for this sample were detected at 5.2 mg/kg.

Addendum #8 Phase #3 (A8PH3) was completed in September 2023 to address exceedances of Restricted Residential SCOs and IRM #5A2 subsurface action levels in native soils along the eastern NAF property boundary, including the samples listed above (**Appendix L**). Analytical data received for A8PH3 identified lead concentrations above 20x TCLP criteria for lead. TCLP analysis for metals were requested for sample A8PH3-B28 due to the detection of 6,100 mg/kg of lead. Lead was detected at 12 mg/L in the TCLP analysis, above the RCRA toxicity characteristic for lead of 5 mg/L. Mercury was detected above Restricted Residential SCOs and 20x TCLP criteria within AOC-20 at sample locations A8PH3-B31, A8PH3-B32, A8PH3-B33 (DUP318) and A8PH3-B34 with concentrations ranging between 5.2 and 13 mg/kg. Mercury was detected in the same area to a depth of 8 ft bgs at IRM #5A2 confirmation sample locations S120-S3, S120-S4, and B1158-S6 at concentrations ranging from 5.7 to 24 mg/kg. The mercury and lead exceedances are delineated laterally to the north, south, and east by other A8PH3 samples as well as IRM #5A2 confirmation samples.

Addendum #8 Phase 3 - Amendment #1 (A8PH3A1) was completed in December 2023 through January 2024 to remove exceedances above 20x TCLP and/or RCRA toxicity characteristics discussed above in native soils remaining along the eastern property boundary to the #c808022 BCP limit associated with a historical water line. Exceedances above Restricted Residential SCOs and 20x TCLP criteria remain in place along the sidewall of the eastern property line, located off-Site. These exceedances are laterally delineated on the Revised BCP Site by imported fill placed as backfill (west) or confirmation samples collected during the Addendum #8 phases (north and south) (**Figure 6-3A** - **Figure 6-3F**).

AOC-20 Groundwater

Potential impacts of AOC-20 on groundwater quality were evaluated using samples collected from monitoring wells located within and downgradient of the AOC. Monitoring well MW-57R is located within AOC-20. Monitoring wells MW-100S and MW-100I and temporary wells B3915 and B3914 are located adjacent to AOC-20. Monitoring wells downgradient of AOC-20 include MW-97. Results are shown compared to TOGS groundwater standards on **Figures 5-5A-1** through **5-5D-2.** Groundwater analytical results including those from previous investigations are presented

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in **Table 5-9** for metals. Metals were not detected above TOGS groundwater standards within and downgradient of AOC-20.

AOC-20 Summary

AOC-20 is a historical water line area located along the eastern property line of the NAF (**Figure 1-4**). Metals, including mercury and lead, were detected above Restricted Residential SCOs during IRM #5A2. The source was identified as an historical water line and remediated through excavations completed under IRM #5A2 - Addendum #8 Phase 3 and Addendum #8 Phase 3 Amendment #1. Exceedances above Restricted Residential SCOs and 20x TCLP criteria remain in place along the sidewall of the eastern property line, located off-Site. These exceedances are laterally delineated on the Revised BCP Site by imported fill placed as backfill (west) or confirmation samples collected during the Addendum #8 phases (north and south). As discussed in Section 6.3.1, no further assessment is warranted to define the nature and extent of impacts in soil for AOC-20 on the Revised BCP Site. Groundwater quality data demonstrates that COPC concentrations remaining in place do not indicate an ongoing source contributing to groundwater exceedances above TOGS standards. Metals were not detected above TOGS groundwater standards within or downgradient of AOC-20. As discussed in Section 6.2, no further assessment is warranted to define the nature and extent of impacts in groundwater on the Revised BCP Site.

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6. NATURE AND EXTENT OF COCS

This section describes the nature and extent of Revised BCP Site-related COCs identified in sub-slab vapor, indoor air, groundwater, and soil during the SC, RI and IRMs. The findings for each media type are presented in further detail below. Based on comparisons to applicable guidance values (NYSDOH Soil Vapor/Indoor Air Decision Matrices for sub-slab vapor and indoor air, TOGS groundwater standards, and Restricted Residential SCOs for soil), the following COCs have been identified to be of primary concern for each media type:

- Sub-Slab Vapor and Indoor Air – VOCs
- Groundwater – VOCs and PCBs
- Soil – PCBs, metals, and SVOCs

6.1 Sub-Slab Vapor and Indoor Air

6.1.1 Sub-Slab Vapor

Sampling between 2000 and 2018 of sub-slab vapor prior to and during the RI detected VOCs above guideline values for mitigation presented in the NYSDOH Soil Vapor/Indoor Air Decision Matrices. Results from sub-slab vapor investigations completed between 2000 and 2018 are presented on **Figure 5V-2A-F** and compared to NYSDOH Soil Vapor/Indoor Air Decision Matrices A, B, D, E, and F. The extent of sample locations with a NYSDOH matrix outcome of "Mitigate" is delineated and provided on applicable figures. This extent is limited to areas which have been addressed through SSD System installation. Analytical results for sampling completed between 2000 and 2018 are included in **Table 5-2**. Based on initial sub-slab vapor sample results, HVS for VOCs was performed between 2014 and 2018 (**Figure 5V-2A-F**) to provide additional characterization of VOCs in sub-slab vapor and to characterize gas transmissivity of the sub-slab fill and the magnitude of leakance of gas across the slab. This analysis provided useful lines of evidence for interpreting the concentration-versus-volume-purged data but also provided critical design parameters for mitigation measures. Results for HVS sampling are included on **Table 5-3**.

SSD Systems have been installed in areas where the results of sub-slab vapors were greater than guideline values for mitigation presented in the NYSDOH Soil Vapor/Indoor Air Decision Matrices or were installed prior to the RI out of abundance of caution, which included the Gymnasium, K-Wing Science Addition, Cafeteria and Cafeteria Addition, F-Wing, and Music Wing of EHS (**Figure 3-2**) to mitigate potential VI to indoor air as discussed in Section 3.1. SSD System effluent for VOCs was sampled in June and August 2018 as part of the SVIA and in December 2020, April and July 2021, December 2021, and November 2023 to 2025 as part of remedial monitoring under the ISMP. Results for effluent sampling for VOCs are on **Figure 6V-1B**. Analytical results for effluent sampling completed in 2018 are presented in **Table 6-1B**. Results for effluent sampling completed in 2020 through 2025 are presented in **Table 6-1C.** Time series of TCE concentrations in SSD System effluent since the 2018 SVIA are shown on **Figure 6V-2**.

1,1,1-TCA and TCE were detected below the east side of the Gymnasium in 2009 (SV-GM EAST) at concentrations of 23,000 µg/m^3 (**Figure 5V-2B**) and 28 µg/m^3 (**Figure 5V-2A**), respectively.

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Per the recommendation of NYSDOH (NYSDOH, 2010), ECSD installed a SSD System in the Gymnasium in 2010 as discussed in Section 3.1.2. Sub-slab vapor below the Gymnasium was not sampled by Unisys in 2014 and 2018 due to the presence of the vapor mitigation system. Sampling of the Gymnasium SSD effluent by Unisys detected 19 µg/m^3 of TCE in June 2018 (**Table 6-1B**), 3.4 µg/m^3 of TCE in November 2023, and 98.9 µg/m3 of TCE in November 2025 (**Table 6-1C**). 1,1,1-TCA was not detected above the laboratory reporting limit. This suggests that TCE may be present in sub-slab vapor below the Gymnasium, but the continued presence of 1,1,1-TCA is unknown.

TCE was detected in sub-slab vapor below Room 127 at a concentration of 2,100 µg/m^3 in 2009 (NYSDOH, 2010). Subsequent sampling in 2014 detected TCE in sub-slab vapor in Room 127 (39,000 µg/m^3), Room 124 (2,100 µg/m^3), Room 125 (390 µg/m^3), and Room 130 (7,300 µg/m^3). Cis-1,2-DCE was detected in 2014 sub-slab vapor below Room 127 (2,000 µg/m^3) and Room 130 (83 µg/m^3). Results for soil-vapor completed in 2009 and 2014 are included in **Figure 5V-2A** and **Table 5-2**. Detections in HVS samples decreased over time, suggesting that the detections in sub-slab vapor were representative of those areas. Based on the detections of TCE and cis-1,2-DCE concentrations exceeding the 2006 NYSDOH Guidance for Evaluating Soil Vapor Intrusion Matrix 1 Mitigation concentration of 250 µg/m3, Unisys installed a sub-slab vapor mitigation system in the F-Wing in 2014 as discussed in Section 3.1.4. TCE and cis-1,2-DCE were detected in the F-Wing SSD effluent in June 2018 (340 µg/m3 and 67 µg/m3, respectively), December 2020 (43 µg/m^3 and 270 µg/m^3), April 2021 (39 µg/m3 and 220 µg/m^3), December 2021 (50 µg/m^3 and 360 µg/m^3), November 2023 (339 µg/m^3 and 66.6 µg/m^3), November 2024 (40.8 µg/m^3 and 246 µg/m^3), and November 2025 (42 µg/m^3 and 303 µg/m^3) as presented on **Figure 6V-1B** and in **Table 6-1C**. TCE was detected in effluent in July 2021 at 26 µg/m^3, but cis-1,2-DCE was not detected. TCE and cis-1,2-DCE effluent concentrations decreased between June 2018 and July 2021 and increased in December 2021. TCE slightly decreased in November 2023 whereas cis-1,2-DCE slightly increased. In November 2024, TCE and cis-1,2-DCE decreased but then slightly increased in November 2025. This indicates that TCE and cis-1,2-DCE are still present in sub-slab vapor below F-Wing.

TCE was detected in 2018 in the sub-slab vapor grab sample in Room 148 at a concentration of 160 µg/m^3 (**Table 5-2**) and in the HVS samples at a concentration of 380 µg/m^3 (**Table 5-3**). TCE was detected in the SSD effluent in August 2018 (58 µg/m^3), April 2021 (15 µg/m^3), July and December 2021 (20 µg/m^3 and 21 µg/m^3, respectively), November 2023 (16.3 µg/m^3), in November 2024 (10.5 µg/m^3), and November 2025 (14.9 µg/m^3) as presented in **Figure 6V-1B** and in **Table 6-1C**. This indicates that TCE is still present in sub-slab vapor below the Music Wing.

Sub-slab vapor was not sampled in the K-Wing or in the Cafeteria during the RI or previous investigations. Vapor mitigation systems were installed during the construction of K-Wing in 2009 and during construction of an addition to the Cafeteria in 2013 as precautionary measures. TCE has been detected in the effluent of the K-Wing, Cafeteria Addition and Cafeteria Retrofit SSD System in 2018, 2020, 2021, and 2023. TCE was not detected in the Cafeteria Addition in 2024 or 2025 but was detected in the K-Wing (18.3 µg/m^3 and 16.3 µg/m^3) and Cafeteria Retrofit (16

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µg/m^3 and 15.2 µg/m^3) during those sampling periods. This suggests that TCE is present in sub-slab vapor beneath the K-Wing and the Cafeteria but VOC concentrations in sub-slab vapor with respect to NYSDOH Soil Vapor/Indoor Air Decision Matrices are unknown in those locations. As shown on **Figure 6V-1B**, TCE concentrations in the SSD effluent of the K-Wing, Cafeteria Addition and Cafeteria Retrofit SSD System have been stable between 2018 and 2025 (**Table 6-1B** and **Table 6-1C**).

Samples of the SSD System effluent were collected for PCB analyses in July 2021 and December 2021 in accordance with ISMP Amendment #2 as shown on **Figure 3-3** and **Figure 6V-2**. PCB Aroclors were not detected above USEPA Exposure Levels for Evaluating PCBs in Indoor School Air (0.1 µg/m^3) during the July 2021 and December 2021 sampling events as presented in **Table 6-1D**.

6.1.2 Indoor and Outdoor Air

6.1.2.1 VOCs

Sampling between 1997 and 2018 of indoor and outdoor air prior to and during the RI detected VOCs above guideline values as presented in the NYSDOH Soil Vapor/Indoor Air Decision Matrices. Sampling of indoor and outdoor air for VOCs has been conducted as part of post-mitigation monitoring under the ISMP and ISMP Amendment #1 between December 2019 and November 2025. Indoor air sampling has included multiple sampling locations throughout EHS, as shown on **Figure 6V-1A**. Results have been reported in ISMP Periodic Review Reports (PRRs) for 2019–2020 (Geosyntec, 2021e), 2021 (Geosyntec, 2023f), 2022 (Geosyntec, 2024e), 2024 (Geosyntec 2025f), 2025 (Geosyntec 2026j) and the *2023 Heating Season Soil Vapor Intrusion Monitoring and Sampling Report* (Geosyntec, 2024f). Results for indoor and outdoor air samples collected between 1997 and 2018 are presented in **Figure 5V-1Ai** to **Figure 5V-1Fii** and included in **Table 5-1A-B**. Results for indoor and outdoor air samples collected between 2019 and 2025 are presented in **Figure 6V-1A** and included in **Table 6-1A**.

VOCs included on NYSDOH Soil Vapor/Indoor Air Decision Matrices have not been detected above the indoor air guideline values for mitigation under ISMP post-mitigation monitoring. This confirms that the SSD Systems are effectively mitigating potential vapor intrusion. For areas of the building outside the SSD system zones of influence, the 2014 Vapor Intrusion Assessment and the 2018 SVIA evaluated sub-slab vapor and indoor air (under HVAC occupied and unoccupied conditions) at locations approved by NYSDEC and NYSDOH throughout the EHS building. No indoor air sample collected in 2014 or 2018 exceeded the applicable NYSDOH guideline values for mitigation that were in effect at the time. Sub-slab vapor and indoor air results evaluated in accordance with NYSDOH Matrices resulted in recommended actions of no further action for those areas, with the exception of the Room 127/F-Wing (SSD system installed in 2014) and Room 148 in the Music Wing (SSD system installed in 2018) as discussed below.

Prior to mitigation, TCE was detected in indoor air in Room 127 during occupied and unoccupied conditions, respectively. Results were below the Soil Vapor/Indoor Air Decision Matrix 1 value for mitigation of 5 µg/m3 issued in 2006 (NYSDOH, 2006) but above the Soil Vapor/Indoor Air Decision Matrix A value of 2 µg/m3 for mitigation issued in 2015 (NYSDOH, 2017). After the

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installation of the F-Wing SSD System in August 2014, there have been no detections of TCE higher than the NYSDOH Matrix A indoor air criterion of 1 µg/m^3 as shown on **Figure 6V-3**. TCE was not detected above the laboratory reporting limit in indoor air in Room 127 during the 2019 to 2025 sampling events.

There were no detections of TCE in indoor air in Room 148 above the NYSDOH Matrix A indoor air criterion of 1 µg/m^3 prior to and after installation of the Music Wing SSD System in August 2018, as shown on **Figure 6V-4**. TCE was not detected above the laboratory reporting limit in indoor air in Room 148 during the 2023 sampling events.

6.1.2.2 PCBs

NYSDOH conducted sampling of indoor and outdoor air samples for PCBs in July and August 2000 at sample locations presented on **Figure 2-2B**. PCBs were reported as non-detect (<0.02 µg/m^3) in all five of the samples collected. Sampling of indoor and outdoor air samples for PCBs was conducted in July 2021 and January 2022 in accordance with ISMP Amendment #2 at sample locations presented on **Figure 3-3**. Indoor air PCB analytical results are compared to the USEPA PCB Exposure Levels in **Table 6-1E**. Three PCB Aroclors (1242, 1248, and 1260) were detected at concentrations ranging from 0.00035 µg/m^3 (estimated) to 0.0035 µg/m^3, which are all at least two orders of magnitude below the USEPA PCB Exposure Level of 0.1 µg/m^3.

Indoor air samples were collected from the boys' locker room in 2000, 2021, and 2022. The locker room is located in the northern portion of the school, near the former slide rail area where elevated PCB concentrations were detected in soil adjacent to the building foundation and in groundwater. PCBs were not detected in the 2000 sample (reporting limit of 0.02 µg/m³). Low-level PCB detections were reported in 2021 and 2022, with estimated Aroclor 1248 concentrations of 0.0035 µg/m³ and 0.0024 µg/m³, respectively. These concentrations are comparable to those measured in other areas of the EHS building and are not elevated relative to them. If residual PCBs near the former slide rail area were contributing to indoor air, higher concentrations would be expected in this nearby location than in other areas of the building. Therefore, the low-level PCB detections in indoor air in the boys' locker room are not attributed to residual PCB impacts in soil and groundwater associated with the former slide rail area. All detected concentrations are more than an order of magnitude below the USEPA PCB exposure level for school indoor air (0.1 µg/m³).

6.2 Groundwater

The following sections describe the nature and extent of COCs remaining in Site groundwater within the Revised BCP Site Boundary and groundwater further downgradient, off-Site. COCs in groundwater have been identified to include PCBs, metals, SVOCs, and VOCs by comparison to TOGS groundwater standards in **Tables 5-8** to **5-11**, respectively. Groundwater results for Emerging Contaminants are compared to NYSDEC guidance values (NYSDEC, 2023) in **Table 5-12**. Current conditions have been assessed during low-water table conditions (Geosyntec, 2024a) and high-water table conditions (Geosyntec, 2024d) as presented by COC on **Figures 6-1A-F** and **Figures 6-2A-F**, respectively. Separate COC figures for high and low- water table conditions have been condensed into one-high water table map and one low-water table map to comprehensively illustrate groundwater nature and extent collectively on **Figure 6-1F** and **6-2F**, respectively.

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Groundwater flow direction is shown on these figures; references to downgradient in the following discussion is in reference to groundwater flow direction. COC concentrations at monitoring wells are used to define nature and extent in groundwater. Temporary monitoring well data are included on **Figures 6-1A-F** and **Figures 6-2A-F** and **Tables 5-8** to **5-12** for completeness, but are not used to define groundwater nature and extent. Two pumping wells located south of the EHS building draw water used for non-contact cooling water production (**Figure 2-3**). A sample from Pumping Well 1 was analyzed for COCs in July 2021 (Sample ID: RI-SUPPLY-WELL-1) and effluent samples from the cooling system (Sample ID: RI-SUPPLY-WELL-EF) were analyzed in August 2021. Data related to these sampling events are reported in **Table 5-8** through **Table 5-12**. Because the pumping wells are actively extracting groundwater and may induce localized hydraulic influence, the analytical results are not considered representative of natural aquifer conditions and, therefore, were not relied upon to evaluate the nature and extent of COCs in groundwater.

Over 50 years have passed since former Sperry Remington operations ceased in 1972. At the ambient groundwater flow rate of 23.8827 ft/day, the volume of groundwater passing through the source material over five decades has accounted for multiple rounds of pore volume flushing in the former source area with dilution of the COC concentrations below the water table. Calculations for the ambient groundwater flow rate are provided in Section 4.4.3. Additionally, as part of the Site IRMs, multiple source areas for COCs in groundwater (e.g., AOC-19 drum nest, former TCE impacted soils area) have been removed and are no longer contributing to groundwater quality impacts. Now that COC source material above the water table has been removed the concentration and distribution of COCs in groundwater will remain stable or decrease under these groundwater flow conditions.

6.2.1 PCBs

PCBs were evaluated during low and high-water table conditions as depicted on **Figures 6-1A** and **6-2A** and compared to TOGS groundwater standards in **Table 5-8**. The following three areas of PCB TOGS (0.09 µg/L) exceedances are currently observed:

i) the former slide rail area (MW-103S and MW-103I). Soil impacts in the former slide rail area were excavated up to the water table and the slide rail system during the FFC IRM (**Appendix P**).
ii) downgradient of AOC-19 (MW-50S, MW-50I, MW-52, MW-51, MW-96, MW-106). Soil impacts associated with AOC-19 were removed with excavation to the water table during IRM #5A2.
iii) the East of Gymnasium area (MW-41, MW-68S, MW-34, MW-67S, MW-30, and MW-89S)

The inferred extent of these PCB TOGS exceedances is depicted on **Figures 6-1A** and **6-2A**. PCB TOGS groundwater standard exceedances in the East of Gymnasium area are outside the Revised BCP Site Boundary but discussed below to inform evaluation of the nature and extent of PCBs in groundwater downgradient of the high school building. The PCB concentrations reported from samples collected during low and high-water table conditions were generally consistent.

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- Former Slide Rail Area:

  MW-103I and MW-103S are in an area north of the school building that was excavated to the water table with the use of slide rail excavation supports to maintain the structural integrity of EHS during IRM #4 in 2020. A cross section illustrating the former slide rail area, sub grade excavation contours, PCBs in soils left in place, and monitoring wells are included in **Appendix P**. The screen interval at MW-103S is set from 15-25 ft bgs, while the screen at MW-103I is set from 28-38 ft bgs, 1 ft into the silty clay aquitard. MW-103I and MW-103S are located downgradient of AOC-3 and cross gradient of AOC-10 to the north. MW-103I and MW-103S were sampled in low-water table conditions during the September 2023 event and in high-water table conditions during the April 2024 event. PCB concentrations at MW-103I increased from the September 2023 sampling event (from 6 µg/L to 7.99 µg/L) while concentrations at MW-103S decreased (from 2 µg/L to 1.6 µg/L). PCB TOGS groundwater standard exceedances at MW-103S/I north of the EHS building are consistent with previous data collected in this area from temporary monitoring wells. Downgradient monitoring wells, MW-13 and MW-85I, did not have PCBs detected in samples collected in 2021 and 2024 and define the downgradient extent of PCB impacts in groundwater in this area. Upgradient monitoring well MW-84S did not have PCBs detected in samples collected and define the upgradient extent of PCB impacts in groundwater in this area. PCB concentrations at the Former Slide Rail Area have been observed to be generally consistent over time. Based on these observations, no further assessment is warranted to further define the nature and extent of PCB in groundwater at the Former Slide Rail Area.

- Downgradient of AOC-19:
  In this area, PCB concentrations at MW-50S, MW-50I, MW-52, MW-51, MW-96, MW-106 have been detected above TOGS groundwater standards. Relative to the area of PCB exceedances of TOGS groundwater standards, MW-50S, MW-50I, and MW-52 are located hydraulically upgradient, with MW-51 and MW-106 downgradient, and MW-96 downgradient of MW-51 and MW-106. Upgradient monitoring wells MW-54R and MW-54 did not have PCB detected above TOGS groundwater standards and define the upgradient extent of PCB impacts in groundwater in this area. MW-108 is located downgradient of MW-96 and defines the downgradient extent of PCB impacts in groundwater in this area.

  - Former monitoring wells MW-50S, MW-50I, and MW-52 characterize the upgradient extent of PCBs in this area. These monitoring wells were sampled in February and April 2021. These locations exceeded TOGS for PCBs in April 2021 (concentrations of 2.3 µg/L, 0.14 µg/L and 7.6 µg/L, respectively). The maximum concentration of PCBs at MW-50S, MW-50I, and MW-52 was 2.3 µg/L in April 2021, 0.14 µg/L in April 2021, and 12.5 µg/L in February 2021, respectively. These monitoring well locations were decommissioned as part of IRM #5A2 in December

2021 as the location of the flush mount monitoring well completions within the baseball field would pose a potential safety risk to students during activities. Replacement monitoring well MW-50R was installed outside of the softball field and defines the extent of PCBs in groundwater above TOGS groundwater standards to the north.

- MW-51 is located approximately 100 ft east (downgradient) of MW-50S, MW-50I, and MW-52. PCBs have been sampled at MW-51 as part of seven sampling events in February 2021, April 2021, May 2023, September 2023, November 2023, January 2024, and April 2024. The maximum concentration of PCBs detected at MW-51 was 0.75 µg/L in February 2021. PCBs at MW-51 have been reported above TOGS in February 2021, April 2021 and September 2023, but reported below TOGS for samples collected in May 2023 (0.074 µg/L) and the three most recent sampling events in November 2023, January 2024, and April 2024, which were reported as non-detections. PCB concentrations at MW-51 have generally decreased from the initial sampling event in February 2021 to April 2024 (0.75 µg/L to non-detect).

- MW-106 is located approximately 100 ft east (downgradient) of MW-52 and 80 ft south (cross gradient) of MW-51. PCBs have been sampled at MW-106 as part of five sampling events in May 2023, September 2023, November 2023, January 2024, and April 2024. The maximum concentration of PCBs at MW-106 detected was 0.57 µg/L in November 2023. PCBs at MW-106 have been reported above TOGS in May, September, November 2023, and April 2024, but reported below TOGS for the sample collected in January 2024 (0.044 µg/L). PCB concentrations at MW-106 have decreased from the initial sampling event in May 2023 to April 2024 (0.48 µg/L to 0.35 µg/L).

- MW-96 is located off-Site, approximately 135 ft east (downgradient) of MW-51 and MW-106. MW-96 is located outside the Revised BCP Site Boundary but discussed below to inform evaluation of groundwater nature and extent downgradient of AOC-19. PCBs have been sampled at MW-96 as part of five sampling events in May 2023, September 2023, November 2023, January 2024, and April 2024. The maximum concentration of PCBs detected at MW-96 was 0.69 µg/L in January 2024. PCBs at MW-96 were reported above TOGS in May 2023, November 2023, and January 2024, but reported below TOGS for samples collected in September 2023 and April 2024, which were reported as non-detections. PCB concentrations have decreased from the initial sampling event in May 2023 to April 2024 (0.35 µg/L to non-detect).

- MW-108 is located off-Site, approximately 760 ft east (downgradient) of MW-96. MW-108 is located outside the Revised BCP Site Boundary but is discussed here

to inform evaluation of the nature and extent of PCBs in groundwater downgradient of AOC-19. MW-108 was sampled in July 2025 and November 2025. PCB concentrations were reported as non-detect in July 2025 and were reported below TOGS (0.012 µg/L) in November 2025. MW-108 defines the downgradient extent of PCB impacts in groundwater in this area.

PCB concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2. Based on these observations, no further assessment is warranted to further define the nature and extent of PCB impacts to groundwater downgradient of AOC-19.

- East of Gymnasium Area:

  PCB concentrations were detected above TOGS in two separate subareas in the East of Gymnasium area: i) MW-34, MW-68S, and MW-41 (adjacent to the southeast corner of the FFC), and ii) MW-89S, MW-30, and MW-67S (north to northeast of science wing; MW-30 and MW-67S are also located near the former industrial sewer).

  In the first subarea, MW-34 is located within the EHS property boundary; MW-68S and MW-41 are located off-Site; MW-34 is upgradient, with MW-68S downgradient; and MW-41 downgradient of MW-68S. MW-34 is located in AOC-11 and AOC-11B. MW-41 is located in AOC-11B. All monitoring wells listed above are located outside the Revised BCP Site Boundary and are located on Site #c808054, but discussed below to inform evaluation of groundwater nature and extent in the East of Gymnasium Area, downgradient of the EHS building and Site #c808022.

  - MW-34 characterizes the upgradient extent of PCBs in this subarea. PCBs have been sampled at MW-34 as part of five sampling events in August 2014, March 2016, February 2021, April 2021, and April 2024. The maximum PCB concentration detected at MW-34 was 1.9 µg/L in August 2014. PCBs have been reported above TOGS in all sampling events. PCB concentrations at MW-34 have decreased from their initial sampling event in August 2014 to April 2024 (1.9 µg/L to 0.67 µg/L).

  - MW-68S is located approximately 50 ft east of MW-34 (downgradient). PCBs have been sampled at MW-68S as part of three sampling events in July 2021, September 2021, and April 2024. The maximum PCB concentration observed at MW-68S was 18 µg/L in July 2021. PCBs have been reported above TOGS in all sampling events.

PCB concentrations at MW-68S have decreased from their initial sampling event in July 2021 to April 2024 (18 µg/L to 16 µg/L).

- MW-41 is located approximately 75 ft east of MW-34 (downgradient) and 40 ft northeast of MW-68S. PCBs have been sampled at MW-41 as part of six sampling events in March 2008, August 2014, March 2016, February 2021, July 2021, and April 2024. The maximum PCB concentration detected at MW-41 was 120 µg/L in March 2008. PCBs have been reported above TOGS in all sampling events. PCB concentrations at MW-41 have decreased from their initial sampling event in March 2008 to April 2024 (120 µg/L to 0.55 µg/L).

- MW-69I, MW-20, and MW-22 are located downgradient of MW-34, MW-68S, and MW-41. PCBs have not been detected in MW-69I, MW-20, or MW-22, and these locations define the downgradient extent of PCB impacts in groundwater in this subarea.

- MW-32, MW-33, MW-102S, and MW-102I are located upgradient of MW-34, MW-68S, and MW-41. PCBs have not been detected above TOGS groundwater standards at MW-32, MW-33, MW-102S, and MW-102I, and these locations define the upgradient extent of PCB impacts in groundwater in this subarea.

In the second subarea, MW-89S, MW-30, and MW-67S are located downgradient of AOC-1, AOC-4, and AOC-10. MW-30 is located within AOC-11B and AOC-11 (**Figure 5-2A-2**). MW-89S is located adjacent to the EHS building. MW-89S is hydraulically upgradient, with MW-30 downgradient, and MW-67S downgradient of MW-30. These monitoring wells are located outside the Revised BCP Site Boundary but discussed below to inform evaluation of groundwater nature and extent in the East of Gymnasium Area, downgradient of the EHS building.

- MW-89S characterizes the upgradient extent of PCBs in this subarea. PCBs have been sampled at MW-89S as part of three sampling events in July 2021, September 2021, and April 2024. The maximum concentration of PCBs detected at MW-89S was 0.1 µg/L in April 2024. PCBs were previously reported as non-detect at MW-89S in July 2021 and September 2021. PCB concentrations at MW-89S have slightly increased over the PCB TOGS of 0.09 µg/L from their initial sampling event in July 2021 to April 2024 (non-detect to 0.1 µg/L).

- MW-30 is located approximately 150 ft northeast of MW-89S (downgradient). PCBs have been sampled at MW-30 as part of four sampling events in July 2019, February 2021, July 2021, and April 2024. The maximum concentration of PCBs detected at MW-30 was 39 µg/L in July 2019. PCBs have been reported above

TOGS in all groundwater sampling events. PCB concentrations have decreased from their initial sampling event in July 2019 to April 2024 (39 µg/L to 2.4 µg/L).

- MW-67S is located approximately 120 ft east of MW-30 (downgradient). PCBs have been sampled at MW-67S as part of three sampling events in July 2021, August 2021, and April 2024. The maximum concentration of PCBs detected at DUP-03 (MW-67S) was 0.61 µg/L in April 2024. PCBs were previously reported as non-detect at MW-67S in July 2021 and August 2021. PCB concentrations at MW-67S have increased from their initial sampling event in July 2021 to April 2024 (non-detect to 0.61 µg/L).

- MW-101I, MW-101S, MW-5S, and MW-5I are located downgradient of MW-89S, MW-30 and MW-67S. PCBs have not been detected in MW-101I, MW-101S, MW-5S, and MW-5I and these locations define the downgradient extent of PCB impacts in groundwater in this subarea.

- MW-104S, MW-104I, MW-105S, and MW-105I are located upgradient of MW-89S, MW-30, and MW-67S. PCBs have not been detected at MW-104S, MW-104I, MW-105S, and MW-105I, and these locations define the upgradient extent of PCB impacts in groundwater in this subarea.

PCB concentrations in the East of Gymnasium area have generally been observed to decrease over time. Based on these observations, no further assessment is warranted to further define the nature and extent of PCBs in groundwater in the East of Gymnasium area.

Other monitoring wells historically observed to exceed TOGS groundwater standards for PCBs include MW-15S, MW-56, MW-57, MW-60, and MW-63I. As shown on **Figure 6-1A** and **Figure 6-2A**, these exceedances are not included in inferred PCB TOGS isocontour lines based on the following data evaluation. PCB concentrations were detected above TOGS groundwater standards at MW-15S in a sample collected in September 2016. MW-15S was decommissioned in June 2017. A replacement monitoring well, MW-84S, was installed in August 2021 in part to evaluate prior results from MW-15S. MW-84S was sampled in September 2021, October 2021, and April 2024. PCB concentrations from MW-84S were non-detect, indicating that groundwater in this area is no longer above TOGS groundwater standards. PCB TOGS exceedances at MW-56, MW-57, MW-60 and MW-63I, located in the NAF, were detected in samples collected in February 2021. These samples were collected shortly after monitoring well installation in January and February 2021. Subsequent PCBs results at MW-56 were reported as non-detect in September 2023, and April 2024. Subsequent PCBs results at MW-57 and MW-60 were reported as non-detect in April 2021 and July 2022. Subsequent PCBs results at MW-63I were reported as non-detect in April 2021 and September 2023. Because subsequent sampling of these monitoring wells have been reported as non-detections and initial exceedances were not repeated, initial exceedances are indicative of a bias caused by colloidal material generated from monitoring well installation activities.

Subsequent sampling of MW-56, MW-57, MW-60, and MW-63I has demonstrated that PCBs are below TOGS in the area monitored by these wells. MW-57 and MW-60 were decommissioned as part of IRM #5A2 in July 2022, as the location of the flush mount monitoring well completions within the baseball field would pose a potential safety risk to students during activities. PCBs were detected above TOGS groundwater standards at MW-1 located off-Site in February 2021 (0.225 µg/L). PCBs were reported below TOGS groundwater standards at MW-1 (0.027 µg/L) in July 2021.

Based on the results from the three areas of PCB TOGS exceedances (the former slide rail area, downgradient of AOC-19, and East of Gymnasium), no further assessment is warranted to further define the nature and extent of PCB in groundwater at the Revised BCP Site. PCB impacts in groundwater are limited in extent to these three areas that have been fully delineated. PCBs are hydrophobic, having very high octanol-water partition coefficients (K_ow values), have a low solubility in water, and have a strong tendency to bind tightly to soil and organic matter. With these characteristics, PCBs do not have a propensity to migrate with groundwater. Consequently, the extent of PCBs in groundwater will remain stable. Groundwater sampling has demonstrated that PCB impacts in groundwater are limited to the three localized areas. PCB concentrations in downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2. PCB concentrations at the Former Slide Rail Area have been observed to be generally consistent over time.

6.2.2 Metals

Metals were evaluated during low and high-water table conditions as depicted on **Figures 6-1B** and **6-2B** and compared to TOGS groundwater standards in **Table 5-9**. Metals were not consistently reported at concentrations above TOGS groundwater standards in monitoring wells with the exception of thallium, iron, and manganese. Further evaluation found that thallium exceedances were false positive bias due to the analytical method. Geochemical modeling indicates that widely distributed and temporally limited exceedances of iron and manganese above TOGS groundwater standards detected at the Site are related to naturally fluctuating groundwater redox conditions and changing stability of iron- and manganese-bearing minerals. Evaluation of thallium via USEPA Method 6020 in addition to USEPA Method 6010 effectively demonstrates that USEPA Method 6010 results were likely false positives and biased high for thallium due to spectral interferences (Geosyntec, 2024a). This conclusion is supported by the measurement of split samples collected on 9 April 2024 at MW-51 and MW-95S via USEPA Method 6020. When measured via USEPA Method 6020, thallium was not detected at measurable concentrations at either MW-51 or MW-95S. Evaluation of thallium via USEPA Method 6020 demonstrates concentrations consistently below TOGS.

As reported in the April 2024 Groundwater IDR (Geosyntec 2024d), a geochemical assessment of iron and manganese demonstrated that iron and manganese TOGS exceedances are related to groundwater redox fluctuations that would be considered consistent with normal background, regional groundwater characteristics and are not Site-related. Geochemist's Workbench® software was used to generate Eh-pH (Pourbaix) diagrams for locations across the monitoring network. Eh-

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pH (Pourbaix) diagrams can be used to illustrate the predicted stability of specific phases at thermodynamic equilibrium under the conditions detected for a groundwater sample, which in turn can indicate the mobility of iron and manganese. Overall, redox modeling results indicate that amorphous iron oxides (the formation of which is more kinetically favorable than crystalline iron oxides) are predicted to be present, although potentially unstable, at some locations across the Site and are a source for dissolved iron in groundwater. Amorphous ferrihydrite is predicted to be the predominant iron species for groundwater conditions at most locations. The Eh-pH diagrams for manganese show that solid phase manganese minerals, including manganese oxides, are not predicted to be thermodynamically stable under conditions across the Site. However, dissolution of crystalline manganese-bearing minerals that interact with groundwater because of changing redox conditions could still result in fluctuating manganese concentrations within Site groundwater, which is consistent with the temporally fluctuating manganese concentrations detected in Site groundwater.

Historically, there have been isolated exceedances of the TOGS groundwater standards for aluminum (MW-1, MW-12, and MW-30), antimony (MW-9I, and MW-93I), arsenic (MW-36), chromium (III+VI) (MW-95I), and lead (MW-1, MW-20, MW-30, and MW-36) (**Table 5-9**). These exceedances were reported as total (unfiltered) metal samples. Dissolved (filtered) metals samples collected from MW-1, MW-12, MW-36, and MW-93I were all reported below TOGS groundwater standards, demonstrating that total metals concentrations above TOGS groundwater standards can be attributed to colloidal material. Based on these observations, no further assessment is warranted to further define the nature and extent of metals impacts to groundwater at the Revised BCP Site.

6.2.3 SVOCs

SVOCs were evaluated during low and high-water table conditions as depicted on **Figures 6-1C and 6-2C** and compared to TOGS groundwater standards in **Table 5-10**. SVOCs were reported sporadically above TOGS groundwater standards at the following monitoring wells:

- MW-11D
- MW-12
- MW-26
- MW-30
- MW-54
- MW-57R
- MW-61
- MW-64I
- MW-67S
- MW-69I
- MW-70S
- MW-72S
- MW-73I

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- MW-73S
- MW-78I
- MW-78S
- MW-95S
- MW-102S
- MW-104S
- MW-106

Benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected at concentrations above TOGS groundwater standards (0.002 µg/L) during low and high water table conditions. Maximum concentrations for each compound were detected in the following samples:

- benz(a)anthracene – 1.8J µg/L (MW-30 in July 2019)
- benzo(b)fluoranthene – 2.3J µg/L (MW-30 in July 2019)
- benzo(k)fluoranthene – 1.0 µg/L (MW-106 in May 2023)
- chrysene – 2.8J µg/L (MW-12 in May 2000)
- indeno(1,2,3-cd)pyrene – 1.1 µg/L (MW-106 in May 2023 and MW-30 in July 2019)

DEHP was commonly reported above TOGS groundwater standards in monitoring wells at the Site. DEHP is a common cross-contaminant and is not a Site COPC. The Wisconsin Department of Natural Resources recognizes DEHP as a common cross-contaminant due to its widespread use in plastics such as polyvinyl chloride (Wisconsin Department of Natural Resources 2002). At the Site, monitoring well casings are constructed of polyvinyl chloride and low-density polyethylene tubing is used for low-flow sample collection, both of which are potential sources of DEHP contamination. Historically, detections of DEHP at the Site have been infrequent and sporadic, with no discernible pattern across specific monitoring wells.

SVOCs were not consistently detected above TOGS groundwater standards at the Revised BCP Site. Instead, SVOC detections at monitoring wells have been sporadic and non-repeatable. SVOCs were reported below TOGS groundwater standards during one or more sampling event for all the above monitoring wells which had reported exceedances.

- MW-11D results were below TOGS for all SVOCs in three out of four sampling events.
- MW-12 results were below TOGS for all SVOCs in three out of four sampling events.
- MW-26 results were below TOGS for all SVOCs in two out of three sampling events.
- MW-30 results were below TOGS for all SVOCs in two out of three sampling events.
- MW-54 results were below TOGS for all SVOCS in one out of two sampling events.
- MW-57R results were below TOGS for all SVOCs in four out of five sampling events.
- MW-61 results were below TOGS for all SVOCs in one out of three sampling events.

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- MW-64I results were below TOGS for all SVOCs in three out of four sampling events.
- MW-67S results were below TOGS for all SVOCs in three out of four sampling events.
- MW-69I results were below TOGS for all SVOCs in two out of three sampling events.
- MW-70S results were below TOGS for all SVOCs in four out of five sampling events.
- MW-72S results were below TOGS for all SVOCs in four out of five sampling events.
- MW-73I results were below TOGS for all SVOCs in two out of three sampling events.
- MW-73S results were below TOGS for all SVOCs in two out of three sampling events.
- MW-78I results were below TOGS for all SVOCs in two out of three sampling events.
- MW-78S results were below TOGS for all SVOCs in two out of three sampling events.
- MW-95S results were below TOGS for all SVOCs in three out of four sampling events.
- MW-102S results were below TOGS for all SVOCs in one out of two sampling events.
- MW-104S results were below TOGS for all SVOCs in one out of two sampling events.
- MW-106 results were below TOGS for all SVOCs in three out of five sampling events.

The distribution of SVOC exceedances has been spatially and temporally inconsistent across the Site. Monitoring wells within the Revised BCP Site Boundary have not consistently exceeded TOGS groundwater standards for SVOCs. Based on these results, no further assessment is warranted to further define the nature and extent of SVOCs in groundwater at the Revised BCP Site.

6.2.4 VOCs

VOCs were evaluated during low and high-water table conditions as depicted on **Figures 6-1D** and **6-2D** and compared to TOGS groundwater standards in **Table 5-11**. The following three areas of VOC TOGS groundwater standard exceedances are currently observed:

i) downgradient of AOC-19 (MW-50S, MW-50I, MW-51, MW-96)
ii) downgradient of the former area of VOC-impacted soils area in the FFC and AOC-11 (MW-11I and MW-99I). VOC-impacted soils were removed by FFC IRM excavation.
iii) the East of Gymnasium area (MW-8S and MW-30).

The inferred extent of these TOGS exceedances are depicted on **Figures 6-1D** and **6-2D**. VOC TOGS groundwater standard exceedances downgradient of the former VOC-impacted soils area in the FFC and in the East of Gymnasium area are outside the Revised BCP Site boundary but discussed below to inform evaluation of groundwater nature and extent downgradient of the FFC and the high school building. The VOC concentrations reported from samples collected during low and high-water table conditions were generally consistent.

- Downgradient of AOC-19:
  In this area VOC concentrations at MW-50S, MW-50I, MW-51, and MW-96 have been detected above TOGS groundwater standards. Relative to the area of VOC exceedances of TOGS groundwater standards, MW-50S and MW-50I are located hydraulically upgradient, with MW-51 located downgradient, and MW-96 located downgradient of MW-51.

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Upgradient monitoring wells MW-52, MW-54R and MW-54 did not have VOCs detected above TOGS groundwater standards and define the upgradient extent of VOCs impacts in groundwater in this area.

- MW-50S and MW-50I are north of AOC-19 and define the upgradient extent of VOCs detected above TOGS groundwater standards in this area. MW-50S and MW-50I were sampled twice for VOCs in February 2021 and April 2021. In February 2021 TCE was detected above TOGS groundwater standards (5 µg/L) at MW-50I (6.5 µg/L) and below TOGS groundwater standards at MW-50S (4.4 µg/L). In April 2021 TCE was detected above TOGS groundwater standards at MW-50S (6.4 µg/L) and below TOGS groundwater standards at MW-50I (4.3 µg/L). MW-50S and MW-50I were decommissioned as part of IRM #5A2 in December 2021 as the location of the flush mount monitoring well completions within the baseball field would pose a potential safety risk to students during activities. Replacement monitoring well MW-50R was installed outside of the softball field and VOCs reported below TOGS groundwater standards. MW-50R defines the northern extent of VOCs below TOGS groundwater standards in this area.

- MW-51 is located downgradient of AOC-19 and approximately 100 feet downgradient of MW-50S and MW-50I. VOCs have been sampled at MW-51 as part of seven sampling events in February 2021, April 2021, May 2023, September 2023, November 2023, January 2024, and April 2024. Acetone, Freon 113, PCE, and TCE were detected above TOGS groundwater standards at MW-51.
  - Acetone was detected above the TOGS groundwater standard (50 µg/L) in just one sample, at 65 µg/L in September 2023, and was non-detect in five of the seven sampling events. Acetone is frequently detected as a cross-contaminant in groundwater sampling programs. The United States Environmental Protection Agency (USEPA, 1999) recognizes acetone as a common contaminant due to its widespread use as a laboratory solvent. Because it could not be replicated, the acetone exceedance is not considered Site-related.
  - The maximum concentration of Freon 113 detected above the TOGS groundwater standard (5 µg/L) at MW-51 was 34 µg/L in November 2023. Freon 113 was reported above TOGS at MW-51 in samples collected in February 2021, April 2021, May 2023, September 2023, and November 2023, but has been reported below TOGS in the two most recent samples collected in January 2024 and April 2024 (3.4 µg/L and 1.1 µg/L, respectively). Freon 113 concentrations at MW-51 have been observed to decrease over time with the two most recent results being below TOGS.
  - The maximum concentration of PCE detected above the TOGS groundwater standard (5 µg/L) at MW-51 was 14 µg/L in February 2021.

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PCE was reported above TOGS at MW-51 in samples collected in February 2021, April 2021, May 2023, November 2023 and April 2024 but has been reported below TOGS in September 2023, and January 2024 (3.9 µg/L and 4.9 µg/L, respectively). PCE concentrations at MW-51 have been observed to decrease over time. The most recent PCE result detected at MW-51, 5.1 µg/L, was above the TOGS groundwater standard but demonstrates a decrease in concentration over time.

- Note, the MW-51 sample collected in February 2021 was diluted by the laboratory and reanalyzed to bring the concentration of target analytes within the calibration range. Results from both the undiluted and diluted analysis are shown on **Table 5-11**.

- The maximum concentration of TCE detected above the TOGS groundwater standard (5 µg/L) at MW-51 was 94 µg/L in November 2023. TCE was reported above TOGS at MW-51 in samples collected in February 2021, April 2021, May 2023, September 2023, November 2023, January 2024 and April 2024. TCE concentrations at MW-51 have been observed to decrease over time. The most recent TCE result detected at MW-51, 16 µg/L, was above the TOGS groundwater standard but demonstrates a decrease in concentration over time.

- MW-96 is located off-Site outside the Revised BCP Site Boundary, approximately 135 feet downgradient of MW-51. VOCs have been sampled at MW-96 as part of five sampling events in May 2023, September 2023, November 2023, January 2024, and April 2024. Freon 113 and TCE were detected above TOGS groundwater standards at MW-96.
  - The maximum concentration of Freon 113 detected above the TOGS groundwater standard (5 µg/L) at MW-96 was 13 µg/L in January and April 2024. Freon 113 concentrations have been inconsistent at MW-96, ranging from 0.93 J µg/L in November 2023 to 13 µg/L in January and April 2024. Freon 113 concentration was reported above TOGS at MW-96 in samples collected in September 2023, January 2024, and April 2024, but has been reported below TOGS in May 2023, and November 2023 (2.8 µg/L and 0.93 µg/L, respectively).
  - The maximum concentration of TCE detected above the TOGS groundwater standard (5 µg/L) at MW-96 was 56 µg/L in April 2024. TCE was reported above TOGS at MW-96 in samples collected in May 2023 (9.1 µg/L), September 2023 (27 µg/L), November 2023 (5.6 J+ µg/L), January 2024 (47 µg/L), and April 2024 (56 µg/L).

- MW-108 is located off-Site approximately 760 ft east (downgradient) of MW-96. MW-108 is located outside the Revised BCP Site Boundary but is included in this discussion to inform evaluation of the nature and extent of VOCs in groundwater

downgradient of AOC-19. MW-108 was sampled in July 2025 and November 2025 with VOC concentrations non-detect. MW-108 defines the downgradient extent of VOC impacts in groundwater in this area.

VOC concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2. Based on these observations, no further assessment is warranted to further define the nature and extent of VOC impacts to groundwater downgradient of AOC-19.

- Downgradient of former VOC-impacted soils area in the FFC:

  Downgradient of the former VOC-impacted soils area in the FFC and AOC-11, VOC concentrations at MW-11I and MW-99I have been observed above TOGS groundwater standards. These monitoring wells are located outside of the Revised BCP Site boundary but discussed below to inform evaluation of the nature and extent of VOCs in groundwater downgradient of the FFC.

  - MW-11I was sampled for VOCs as part of two sampling events in July 2025 and November 2025. TCE was detected at 7 µg/L in November 2025 above TOGS groundwater standards (5 µg/L). TCE was previously detected at MW-11I at 1.5 µg/L in July 2025, below TOGS groundwater standards.
  - MW-99I is located approximately 300 ft east (downgradient) of MW-11I. In September 2023 and April 2024, exceedances of TCE (TOGS 5 µg/L) were detected at MW-99I (5.4 µg/L and 6.8 µg/L, respectively).
  - MW-107S and MW-107I are located approximately 330 ft east (downgradient) of MW-99I. TCE has not been detected above TOGS groundwater standards at MW-107S and MW-107I and this location defines the downgradient extent of VOC impacts in groundwater in this area.

  Based on these observations, no further assessment is warranted to further define the nature and extent of VOCs in groundwater downgradient of the former VOC-impacted soils area in the FFC.

- East of Gymnasium Area:

  VOC concentrations at MW-8S and MW-30 in the East of Gymnasium area have been reported above TOGS groundwater standards. MW-8S and MW-30 are located outside the Revised BCP Site boundary but are included in this discussion to inform evaluation of the nature and extent of VOCs in groundwater downgradient of AOCs within the Revised BCP Site boundary. MW-8S is located in AOC-11, MW-30 is located in AOC-11B. Acetone, dichloromethane, dichlorodifluoromethane, cis-1,2 DCE, Freon 113, PCE, 1,1,1-TCA, TCE, and vinyl chloride were previously reported above TOGS groundwater standards at MW-8S and MW-30. 1,1-DCE and trans-1,2 DCE were also reported above

TOGS groundwater standards at MW-30. MW-8S and MW-30 have been sampled for VOCs 15 times, having first been sampled in April 2002.

- In the most recent sample collected at MW-8S in April 2024 exceedances of the TOGS groundwater standard for Freon 113 and cis-1,2-DCE (5 µg/L) were detected (9.2 µg/L and 10 µg/L, respectively). All other VOCs previously detected above TOGS groundwater standards were detected below TOGS standards in April 2024. VOC concentrations at MW-8S have been generally observed to decrease over time; cis-1,2 DCE has decreased by two orders of magnitude over time.
  - Acetone was reported above TOGS groundwater standards (50 µg/L) at MW-8S in June 2005 and May 2006 (72 µg/L and 300 µg/L, respectively). Acetone was not detected in any samples collected more recently, in August 2014, February 2021, July 2021, and April 2024. Acetone is frequently detected as a cross-contaminant in groundwater sampling programs. The United States Environmental Protection Agency (USEPA, 1999) recognizes acetone as a common contaminant due to its widespread use as a laboratory solvent. Because it could not be replicated in numerous re-samplings, the acetone exceedance is not considered Site-related.
  - Dichloromethane was reported above TOGS groundwater standards (5 µg/L) at MW-8S in December 2005 and May 2006 (880 µg/L and 300 µg/L, respectively). Dichloromethane is no longer detected at this location, having not been detected in samples from MW-8S in February 2021, July 2021, and April 2024.
  - Dichlorodifluoromethane was reported above TOGS groundwater standards (5 µg/L) at MW-8S in February 2021 (6.1 µg/L). Samples from August 2014 and July 2021 were non-detect and April 2024 was below the TOGS groundwater standard.
  - The maximum concentration of cis-1,2 DCE detected above the TOGS groundwater standard (5 µg/L) at MW-8S was 4,800 µg/L in June 2004. Cis-1,2 DCE concentrations have decreased by two orders of magnitude over time, and in recent sampling since 2021 have been declining from a maximum of 42 µg/L in February 2021 to 10 µg/L at the most recent April 2024 sampling.
  - The maximum concentration of Freon 113 detected above the TOGS groundwater standard (5 µg/L) at MW-8S was 14,000 µg/L in June 2002. Freon 113 concentrations have decreased by three orders of magnitude over time, and in recent sampling since 2014 have been below TOGS standards or no greater than 26 µg/L (February 2021).
  - The maximum concentration of PCE detected above the TOGS groundwater standard (5 µg/L) at MW-8S was 300 µg/L in May 2006. PCE concentrations have decreased by two orders of magnitude over time, and

in the five most recent samplings since July 2007 all results have been below TOGS groundwater standards for PCE.

- The maximum concentration of TCE detected above the TOGS groundwater standard (5 µg/L) at MW-8S was 300 µg/L in May 2006. TCE concentrations have decreased two to three orders of magnitude over time, have not exceeded the TOGS groundwater standards after July 2007, and in the two most recent samplings TCE has been non-detect.
- 1,1,1-TCA was reported above TOGS groundwater standards (5 µg/L) at MW-8S in just one sample, from May 2006 (300 µg/L). 1,1,1-TCA is no longer detected at this location, having not been detected in samples from MW-8S in August 2014, February 2021, July 2021, and April 2024.
- The maximum concentration of vinyl chloride detected above the TOGS groundwater standard (2 µg/L) at MW-8S was 200 µg/L in May 2006. Vinyl chloride concentrations have been two to three orders of magnitude less in all fifteen other samplings and have been below TOGS groundwater standards in three of the last five samplings. Results in February and July 2021 of 2.6 µg/L and 2.5 µg/L, respectively, exceeded TOGS while the most recent result of 0.78 µg/L from April 2024 was below TOGS groundwater standards.

- In the most recent sample collected at MW-30 in April 2024, no exceedances of the TOGS groundwater standard for VOCs were detected. VOCs at MW-30 have decreased over time to concentrations that have been consistently below TOGS groundwater standards. VOCs that were detected in the past at MW-30 are no longer detected there, including dichloromethane, 1,1-DCE, trans-1,2 DCE, and 1,1,1-TCA.
  - Acetone was reported above TOGS groundwater standards (50 µg/L) in May 2003, September 2003, and June 2005 (97 µg/L, 76 µg/L, and 84 µg/L, respectively). More recently, in eight samplings since 2005, acetone has been below TOGS groundwater standards. Acetone was non-detect for samples collected from MW-30 in August 2014, February 2021, and April 2024. Acetone is frequently detected as a cross-contaminant in groundwater sampling programs. The United States Environmental Protection Agency (USEPA, 1999) recognizes acetone as a common contaminant due to its widespread use as a laboratory solvent.
  - Dichloromethane was reported above TOGS groundwater standards (5 µg/L) at MW-30 in June 2005, December 2005, and May 2006 (20 µg/L, 120 µg/L, and 30 µg/L, respectively). Dichloromethane has not been detected in samples from MW-30 in any of the six samplings since July 2007, through and including the most recent sampling in April 2024.
  - Dichlorodifluoromethane was reported above TOGS groundwater standards (5 µg/L) at MW-30 in July 2019, February 2021, and July 2021

(20 µg/L, 21 µg/L, and 6.6 µg/L, respectively). Dichlorodifluoromethane was not detected above TOGS groundwater standards in the most recent sampling in April 2024 (4.8 µg/L).

- 1,1-DCE was reported above TOGS groundwater standards (5 µg/L) at MW-30 in just one sample, from May 2003 (6.3 µg/L). 1,1-DCE is no longer detected at this location, having been not detected in any of the last eight samplings dating back to September 2003 and continuing through the most recent sampling in April 2024.
- The maximum concentration of cis-1,2-DCE detected above the TOGS groundwater standard (5 µg/L) at MW-30 was 940 µg/L in June 2002. Cis-1,2 DCE concentrations have decreased by two orders of magnitude over time, and the most recent results from April 2024 (3.8 µg/L) were below TOGS groundwater standards.
- Trans-1,2 DCE was reported above TOGS groundwater standards (5 µg/L) in one sample from May 2003 (6.8 µg/L). Trans-1,2 DCE has not been detected at this location in any of the last four samplings from 2019 to 2024.
- The maximum concentration of Freon 113 detected above the TOGS groundwater standard (5 µg/L) at MW-30 was 21,000 µg/L in June 2002. Freon 113 concentrations have decreased by four orders of magnitude over time, and the most recent results from April 2024 (2.6 µg/L) were below TOGS groundwater standards.
- The maximum concentration of PCE detected above the TOGS groundwater standard (5 µg/L) at MW-30 was 90 µg/L in May 2003. PCE concentrations have decreased by an order of magnitude over time and have remained below TOGS groundwater standards in the four most recent samplings from July 2019 to April 2024, ranging as low as 0.66 µg/L in the most recent April 2024 sampling.
- The maximum concentration of TCE detected above the TOGS groundwater standard (5 µg/L) at MW-30 was 92 µg/L in May 2003. TCE concentrations have decreased by two orders of magnitude over time, and have remained below TOGS groundwater standards in the four most recent samplings from July 2019 to April 2024, being non-detect in the most recent April 2024 sampling.
- The maximum concentration of 1,1,1-TCA detected above the TOGS groundwater standard (5 µg/L) at MW-30 was 30 µg/L in May 2006. 1,1,1-TCA is no longer detected at this location, having been not detected in samples from MW-30 in any of the five most recent samplings in August 2014, July 2019, February 2021, July 2021, and April 2024.
- The maximum concentration of vinyl chloride detected above the TOGS groundwater standard (2 µg/L) at MW-30 was 20 µg/L in May 2006. Vinyl chloride concentrations have decreased by one to two orders of magnitude over time and have remained below TOGS in five of the six most recent

samplings, with the exception being July 2021 (4.7 µg/L). Vinyl chloride was not detected at MW-30 in the most recent April 2024 sampling.

VOCs have not recently been detected above TOGS downgradient of the East of Gymnasium area at MW-67S, MW-67I, MW-101S, and MW-101I, which define the downgradient extent of VOCs in groundwater in this area. Based on these observations, no further assessment is warranted to further define the nature and extent of VOC impacts to groundwater downgradient of the East of Gymnasium area.

Other monitoring wells where VOCs detections previously exceed TOGS groundwater standards for VOCs include MW-D, MW-5S, MW-9S, MW-12, MW-17 and MW-47I. MW-D, MW-5S, MW-9S, MW-12 and MW-17 are located outside the Revised BCP Site boundary but are included in this discussion to inform evaluation of the nature and extent of VOCs in groundwater downgradient of AOCs within the Revised BCP Site Boundary. As shown on **Figure 6-1D** and **Figure 6-2D**, these exceedances are considered historical in nature and are not used to define the inferred VOC TOGS isocontour lines.

- MW-D, located in the East of Gymnasium area, exceeded the TOGS groundwater standard for cis-1,2 DCE (maximum concentration of 1,300 µg/L in May 2003), Freon 113 (maximum concentration of 3,400 µg/L in May 2003), and PCE (50 µg/L in May 2003). The most recent TOGS exceedance detected at MW-D was in December 2004. Samples collected in 2005 and 2007 were reported below TOGS groundwater standards for all VOCs. MW-D is no longer an active monitoring well. MW-81I was installed adjacent to MW-D for the purpose of evaluating VOCs at this location and depth and VOCs were reported as non-detect for samples collected in July 2021, August 2021, and April 2024.
- MW-5S, located off-Site, exceeded the TOGS groundwater standard for cis-1,2-DCE (maximum concentration of 380 µg/L in July 2002), Freon 113 (35 µg/L in September 2003), TCE (550 µg/L in December 1997), and vinyl chloride (maximum concentration of 88 µg/L in July 2002). The most recent TOGS exceedance was detected in July 2007. Samples collected in February 2021 and July 2021 were reported below TOGS groundwater standards for all VOCs.
- MW-9S, located in the East of Gymnasium area along the western property boundary, exceeded the TOGS groundwater standard for Freon 113 in May 2003 (5.4 µg/L). Freon 113 was non-detect in subsequent samples collected in February 2021, July 2021, and April 2024.
- MW-12, located in the East of Gymnasium area adjacent to the school building, exceeded the TOGS groundwater standard for cis-1,2 DCE (one exceedance, 9 µg/L), Freon 113 (maximum result 160 µg/L), and TCE (two exceedances, 9 and 6.8 µg/L) in samples collected between May 2000 and July 2007. These VOC compounds all were non-detect in more recent samplings in February 2021 and July 2021.
- MW-17, located off-Site, exceeded the TOGS groundwater standard for TCE (6 µg/L in May 2000). The most recent TOGS groundwater standard exceedance was detected in May

2000. Samples collected in September 2000 and May 2003 were reported below TOGS groundwater standards for all VOCs.

- MW-47I, located near the main entry way to the school building, exceeded the TOGS groundwater standard for benzene (1.5 µg/L compared to TOGS of 1 µg/L) in September 2021. Benzene was non-detect in samples collected in October 2021 and April 2024.

Based on the evaluation of the comprehensive Site-wide groundwater data, no further assessment is warranted to further define the nature and extent of VOC impacts to groundwater at the Revised BCP Site.

6.2.5 Emerging Contaminants

Emerging contaminants (PFAS and 1,4-dioxane) were evaluated during low and high water table conditions as depicted on **Figures 6-1E** and **6-2E** and compared to NYSDEC guidance values in **Table 5-12**. PFOS and PFOA were reported above the NYSDEC guidance values. PFOS and PFOA were detected above guidance values in isolated areas of the NAF (MW-48 and MW-58), and in monitoring wells in the south portion of the Revised BCP Site, primarily on the upgradient western side of the Site. The PFAS concentrations reported from samples collected during low and high water table conditions were generally consistent.

- Isolated NAF Areas

  In this area isolated PFAS guidance value exceedances at MW-48 and MW-58 were detected. The exceedances at MW-48 and MW-58 have been spatially and temporally inconsistent.

  - MW-48 is located in the northeast corner of the NAF. PFAS has been sampled at MW-48 as part of two sampling events in February 2021 and April 2021. PFOS exceeded the guidance value (2.7 ng/L) in April 2021 (2.9 ng/L). PFOS was previously detected below guidance values in a sample collected in February 2021 at MW-48. PFAS guidance value exceedances were not detected upgradient or downgradient of MW-48. MW-48 was decommissioned as part of IRM #5A2 in July 2023 as the location of the flush mount monitoring well completions within the soccer field would pose a potential safety risk to students during activities. A replacement monitoring well (MW-48R) was installed outside of the soccer field and PFOS reported below the guidance values in September 2023, November 2023, January 2024, and April 2024.
  - MW-58 is located in the southeast corner of the NAF. PFAS has been sampled at MW-58 as part of three sampling events in February 2021, April 2021, and September 2023. PFOS exceeded the guidance value (2.7 ng/L) in September 2023 (4.3 ng/L). PFOA exceeded the guidance value (6.7 ng/L) in September 2023 (10 ng/L). PFOS and PFOA were previously detected below guidance values in samples collected in the February 2021 and April 2021 sampling events at MW-58. PFAS guidance value exceedances were not detected upgradient or downgradient of MW-58.

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- Southern Portion of Site

  Detections of PFOS or PFOA above NYSDEC guidance values were detected in the southern portion of the Site (MW-13, MW-30, MW-47, MW-47I, MW-67S, MW-70S, MW-72S, MW-75S, MW-82S, MW-83I, MW-83S, MW-90S, MW-90I, MW-91S, MW-94S, and MW-94I). MW-30, MW-47, MW-47I, MW-72S, MW-72I, MW-82S, MW-83I, MW-83S, MW-90S, MW-90I, and MW-91S are located outside the Revised BCP Site but discussed below to inform evaluation of groundwater nature and extent in the southern portion of the Site. MW-67S is located off-Site.

  - PFOS was detected above the NYSDEC guidance value (2.7 ng/L) at MW-13, MW-30, MW-47, MW-47I, MW-70S, MW-72S, MW-75S, MW-82S, MW-83I, MW-83S, MW-90I, MW-90S, MW-91S, MW-94I, and MW-94S. The maximum PFOS concentration detected in the southern portion was 13 ng/L at MW-90S in April 2024.

  - PFOA was detected above NYSDEC guidance value (6.7 ng/L) in MW-90S (7.8 ng/L) and MW-67S (9 ng/L) in April 2024. The maximum PFOA concentration detected in the southern portion was 9 ng/L at MW-67S in April 2024. MW-67S is located off-Site. MW-90S was previously sampled for PFOA in September 2021 and October 2021, with PFOA detected below NYSDEC guidance values during both sampling events. MW-67S was not sampled for PFOA prior to April 2024.

The PFAS exceedances in the southern portion are in an area contiguous with exceedances of NYSDEC guidance values on the upgradient west side of the Revised BCP Site. PFOS were detected above the guidance value of 2.7 ng/L in monitoring well MW-9 on the #p808049 Site. This exceedance is located hydraulically upgradient (west) of the EHS building. Based on the data, PFOA and PFOS concentrations in groundwater are greater on the upgradient side of the Revised BCP Site.

1,4-Dioxane was not detected in the September 2021 sample from MW-47I when analyzed by Method 8270E SIM. A result of 28 µg/L reported for the same sample by Method 8270C is considered a probable false positive, as it was not corroborated by the 8270E SIM analysis, which has a lower detection capability. With the exception of the probable false positive 8270C result at MW-47I, 1,4-dioxane was not detected above the NYSDEC guidance value (**Table 5-12**). No further assessment is warranted to further define the nature and extent of emerging contaminants in groundwater at the Revised BCP Site.

6.2.6 Groundwater Monitoring

Groundwater monitoring will be required as part of the SMP to confirm the performance and effectiveness of the remedy, which included the removal of potential sources to groundwater. Groundwater contamination (remaining after active remediation) will be addressed with eight quarters of groundwater sampling and then an assessment to determine if concentrations are decreasing, stable, or increasing. The assessment will consider the frequency of monitoring necessary as part of the long-term monitoring program and the need for groundwater remediation.

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Active remediation or the need for any additional investigation will be evaluated if groundwater contamination shows substantive changes over time, or a request from NYSDEC is made.

6.3 Soil

The following sections describe the nature and extent of COCs remaining in place in Site soil following implementation of the IRMs described in Section 3. Detections in soil that exceed Restricted Residential SCOs are COCs remaining in place. COCs identified in soils include metals, PCBs, SVOCs, VOCs, and emerging contaminants (PFAS and 1,4-dioxane). Analytical results for shallow subsurface soil, subsurface soil to the water table, and deep soil below the water table (>16 ft bfg) are provided in **Tables 6-2A-E, 6-3A-E and 6-4A-E**, respectively. EC (2-foot soil cover and hardscape) cover systems were constructed as part of the IRMs to limit exposure to COCs (see **Figures 3-1A-F**). The EC soil cover system is comprised of a minimum of 24-inches of imported material overlain by asphalt, concrete pavement, vegetative cover, stone, or liner. A demarcation layer was placed prior to backfilling with clean fill material used for the cover system. COCs remain in place within and below the EC cover systems following IRM completion and will be managed under the ISMP and future SMP for the Revised BCP Site pending the final remedy to be selected from the remedial alternatives presented in Section 9.

Multiple samples collected as part of IRM #5A2 Addendum 8 Phase 3 are located beyond or adjacent to the Revised BCP Site on NSRC property. As presented in the *Off-Site Area Norfolk Southern Investigation Work Plan Addendum #1 – Interim Data Report* (Geosyntec, 2026h) submitted 27 February 2026 (NYSDEC review pending), select metals and SVOC Restricted Residential SCO exceedances on the NSRC property are not attributable to on-Site sources. Further assessment of the nature and extent of soil contamination onto NSRC property will be discussed in the #c808054 RIR/AA. Based on an evaluation of off-Site anthropogenic sources as presented in the *NAF West Soil Sampling Interim Data Report #2* (Geosyntec, 2024j), SVOC and metals Restricted Residential SCO exceedances identified along the western property boundary adjacent to off-Site residential properties likely do not emanate from the Site. Limited approval of the validated data presented in the report was provided by NYSDEC 11 December 2024 (**Appendix A**). Further evaluation of potential emanation from the Site will be addressed as part of the off-Site RI. These samples are included for completeness.

Residual contamination refers to PCBs at TSCA levels and metals present at concentrations that have the potential to exhibit the characteristic of toxicity which remain in place after remedial actions. Residual contamination remain in isolated locations where excavation was technically impracticable, including for soils at and below the water table and areas adjacent to building foundations, utilities, and historic structures (**Appendix N**). These locations left in place due to technical impracticability will also be managed under the ISMP and future SMP for #c808022. The circumstances surrounding residual contamination remaining in place are described in the following sections, where applicable. Residual COCs refers to PCBs, metals, SVOCs, VOCs, and

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emerging contaminants which remain in place above Restricted Residential SCOs or guidance values.

The limits for the Restricted Residential SCO exceedances, TSCA level PCBs, and soils with the potential to exhibit the characteristic of toxicity on the Revised BCP Site are depicted on corresponding figures for each Site area presented below. The lateral limits of these exceedances are either defined by soil borings and IRM samples remaining in place below Restricted Residential SCOs, or extend to the Revised BCP Site Boundary where limits are inferred. For areas where samples remaining in place are below Restricted Residential SCOs, the extent is considered defined. Where Restricted Residential SCO exceedances are not defined within the Revised BCP Site boundary, the limit is depicted up to the boundary and shown as inferred. In areas where the limits are inferred up to the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054.

The nature and extent of COCs with exceedances of PoG SCOs are considered within the context of detections in groundwater above TOGS groundwater standards. That is, the groundwater RI results are used to provide further evaluation of exceedances of PoG SCOs.

6.3.1 Northern Athletic Fields

Soil conditions remaining in place within the NAF area were evaluated for PCBs, metals, SVOCs, VOCs, and emerging contaminants relative to the Restricted Residential SCOs and applicable guidance values. Based on post-IRM conditions, residual COCs for PCBs, metals, SVOCs, and PFOS remain in place in limited areas. Remaining exceedances are delineated within the Revised BCP Site Boundary, identified in areas adjacent to but outside the Revised BCP Site Boundary, or inferred to extend to the Site boundary. These areas will be further evaluated as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Residual exceedances within the upper 2 ft are limited, and where present on-Site, are to be managed under the site management controls, including the ISMP and future SMP.

A detailed summary demonstrating investigation of AOCs, including data collection, potential source areas, and impacted media was previously presented for each AOC within the NAF in Section 5. AOCs in the NAF Area include AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-2C (Drywell Near Building 49), AOC-3A (1979 Drywell Field), AOC-6 (Concrete Vaults), AOC-7 (Drywell Structures), AOC-10A (Contaminated Subsurface Soils), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-16 (Machine Shop Area), AOC-19 (former drum nest area), and AOC-20 (Historical Water Line). Restricted Residential SCO exceedances are widespread across the NAF and are generally associated with historical fill materials. A source area (former drum nest) was encountered within AOC-19 during implementation of IRM activities in the NAF on 5 January 2022. A source area defined as AOC-20 (historical water line) was encountered along the eastern property line of the NAF boundary where confirmation samples during IRM #5A2 detected concentrations of mercury up to 200 mg/kg and lead up to 6,100 mg/kg. The provided Restricted Residential SCO limits for the NAF area demonstrate delineation of the nature and extent of these AOCs that are in the NAF.

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As shown on **Figures 6-3A-H**, Restricted Residential SCO exceedances remaining in place generally form a laterally continuous zone extending across the multiple AOCs located within the NAF. The lateral limits of these Restricted Residential SCO exceedances are either defined by soil borings and IRM samples remaining in place below Restricted Residential SCOs or extend to the Revised BCP Site Boundary where limits are inferred. For areas where samples remaining in place are below Restricted Residential SCOs, the extent is considered defined. Where Restricted Residential SCO exceedances are not defined within the Revised BCP Site boundary, the limit is depicted up to the boundary and shown as inferred. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Given the widespread occurrence of Restricted Residential SCO exceedances across the NAF Area, the depicted lateral extent is intended to be conservative and provide a limit for the multiple Site COCs (i.e. PCBs, metals, SVOCs, VOCs, and emerging contaminants). Accordingly, the mapped limits may include areas excavated as part of an IRM and encompass portions of multiple AOCs where exceedances are laterally contiguous. Vertically, Restricted Residential SCO exceedances in the NAF are limited to 34 ft bfg. IRM activities have removed a substantial portion of exceedances above the water table. Remaining impacts are limited in areal extent and depth and do not represent a significant ongoing source following remediation. Restricted Residential SCO exceedances are adequately delineated to support RI objectives, including decision-making regarding remedial actions for the Revised BCP Site, identification of COC sources and migration pathways, evaluation of actual or potential receptors, and completion of a qualitative human health risk assessment. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP.

A summary of these defining samples or inferred limits is provided by depth bfg for the NAF area in **Appendix S**. Limits are presented for the Site cardinal directions for each depth (i.e. north, east, south, and west). Site Cardinal directions are relative to "Site north" orientation which designates the EHS Building as north, the NSRC railroad property as east, the STCC property as south, and Main Street as west. Limits that are inferred up to the Revised BCP Site boundary are noted with rationale provided where applicable. Each depth interval is also evaluated to present samples which define the vertical extent of exceedances.

Above the Water Table (0-16 ft bfg)

The nature and extent of COCs remaining in place above the water table in the NAF are presented in 2-foot intervals in ft bfg on **Figures 6-3A-H**. In the NAF area, the water table is assumed at 16 ft bfg. Excavation and removal of impacted soil in the NAF was conducted as part of IRM #5A2 completed between October 2021 and July 2024 (Section 3.2.5). Most of the NAF was excavated to a minimum of 24 inches below final restoration grade, except for areas along the property boundary where native soils were left in place to maintain integrity of the property line fencing and established trees located on adjacent properties, along active utility corridors, and along other existing infrastructure (e.g., scoreboard foundations and baseball netting). Soil cover verification sampling was conducted between June 2022 and January 2024 to verify soil cover quality in the uppermost 24 inches below final restoration grade.

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PCBs

PCBs remain in place at concentrations above the Restricted Residential SCO (1 mg/kg) at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2A** and **6-3A**). The maximum concentration of PCBs above Restricted Residential SCO in place is 25.06 mg/kg, 15.47-17.47 ft bfg, at SSHS-B3266-SUB-12-14. PCBs are horizontally defined for the NAF area from 0-16 ft bfg by the Restricted Residential SCO Limits depicted on **Figures 6-3A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2. There are no total PCB concentrations at or above the TSCA level of 50 mg/kg remaining in place from 0-16 ft bfg in the NAF area. Restricted Residential SCO PCB exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP. From 0-2 ft bfg, exceedances of Restricted Residential SCOs remain in place within the soil cover system at the following locations:

- SLT-S89-BOT1 (1.01 mg/kg) at 1.42 ft bfg. This is a bottom sample from the ISMP excavation to extend the water line from Field House #1 to a fire hydrant.

Metals

Metals including arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, and nickel remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2B** and **6-3B**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of metals above Restricted Residential SCOs left in place are as follows:

- Arsenic (16 mg/kg) – 88 mg/kg 4.18 ft bfg at SSHS-IRM5A2-PIPE22
  - This sample is located within the Revised BCP Site Boundary (#c808022)
- Barium (400 mg/kg) – 1,800 mg/kg 0-2 ft bfg at SSHS-IRM5A2-A8PH7-S5
  - This sample is located off-Site beyond the Revised BCP Site Boundary
- Cadmium (4.3 mg/kg) – 17 mg/kg 7 ft bfg at SSHS-IRM5A2-PIPE16
  - This sample is located within the Revised BCP Site Boundary (#c808022)
- Chromium (III + VI) (110 mg/kg) – 120 mg/kg 0-2 ft bfg at SSHS-IRM5A2-A8PH3-S5
  - This sample is located off-Site beyond the Revised BCP Site Boundary
- Copper (270 mg/kg) – 3,600 mg/kg 1.58 ft bfg at SSHS-IRM5A2-A8PH3-S7
  - This sample is located off-Site beyond the Revised BCP Site Boundary
- Lead (400 mg/kg) – 38,000 mg/kg 0-2 ft bfg at SSHS-IRM5A2-A8PH7-S5
  - This sample is located off-Site beyond the Revised BCP Site Boundary
- Manganese (2,000 mg/kg) – 9,800 mg/kg 5.66 ft bfg at SSHS-IRM5A2-A6-S412
  - This sample is located within the Revised BCP Site Boundary (#c808022)
- Mercury (0.81 mg/kg) – 14 mg/kg 2-4 ft bfg at SSHS-IRM5A2-A8PH3A1-S3
  - This sample is located off-Site beyond the Revised BCP Site Boundary
- Nickel (310 mg/kg) – 7,300 mg/kg 6.29 ft bfg at SSHS-IRM5A2-AREA C-B3-S6
  - This sample is located within the Revised BCP Site Boundary (#c808022)

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Metals are horizontally defined for the NAF area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-3A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

Exceedances above Restricted Residential SCOs along the BCP property boundary were identified during Addendum 8 Phase 3 through Phase 7. Multiple samples collected during Addendum 8 Phase 3 through Phase 7 are located off-Site beyond the Revised BCP Site Boundary. As presented in the *Off-Site Area Norfolk Southern Investigation Work Plan Addendum #1 – Interim Data Report* (Geosyntec, 2026h) submitted 27 February 2026 (NYSDEC review pending), select Restricted Residential SCO exceedances for metals on the NSRC property are not attributable to on-Site sources. Further assessment of the nature and extent of soil contamination on NSRC property will be completed as part of the ongoing off-Site RI. Based on an evaluation of off-Site anthropogenic sources as presented in the *NAF West Soil Sampling Interim Data Report #2* (Geosyntec, 2024j), Restricted Residential SCO exceedances for metals identified along the western property boundary adjacent to off-Site residential properties likely do not emanate from the Site. Limited approval of the validated data presented in the report was provided by NYSDEC 11 December 2024 (**Appendix A**). Further evaluation of potential emanation from the Site will be addressed as part of the off-Site RI. These samples are included for completeness.

Mercury remains in place at 0-2 ft bfg (i.e., within the IRM #5A2 soil cover system) above the Restricted Residential SCO (0.81 mg/kg) at 0.95 mg/kg at FL-S225 near South Main Street (**Figure 6-3A**). Soils were left in place at this location due to the presence of a historic concrete wall and adjacent subsurface utilities (**Appendix N**). This exceedance was submitted to the Agency on 31 August 2022 in the "Florida Central" completion package and was approved to remain in place by NYSDEC on 7 September 2022.

Metals above Restricted Residential SCOs remain in place along the sidewalls of the property line from 0-2 ft bfg, located off-Site beyond the Revised BCP limits. Restricted Residential SCO exceedances remaining from 0-2 ft bfg are delineated. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054.

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SVOCs

SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2C** and **6-3C**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of SVOCs above Restricted Residential SCOs left in place are from 0-2 ft bfg at

SSHS-IRM5A2-A8PH7-S5, which is located off-Site beyond the Revised BCP Site Boundary. The concentrations of SVOCS above the Restricted Residential SCOs at SSHS-IRM5A2-A8PH7-S5 are as follows:

- acenaphthene (100 mg/kg) – 120 mg/kg
- anthracene (100 mg/kg) – 210 mg/kg
- benz(a)anthracene (1 mg/kg) – 240 mg/kg
- benzo(a)pyrene (1 mg/kg) – 190 mg/kg
- benzo(b)fluoranthene (1 mg/kg) – 220 mg/kg
- benzo(k)fluoranthene (3.9 mg/kg) – 100 mg/kg
- benzo(g,h,i)perylene (100 mg/kg) – 120 mg/kg
- chrysene (3.9 mg/kg) – 240 mg/kg
- dibenz(a,h)anthracene (0.33 mg/kg) – 37 mg/kg
- dibenzofuran (59 mg/kg) – 100 mg/kg
- fluoranthene (100 mg/kg) – 520 mg/kg
- fluorene (100 mg/kg) – 130 mg/kg
- indeno(1,2,3-cd)pyrene (0.5 mg/kg) – 110 mg/kg
- phenanthrene (100 mg/kg) – 850 mg/kg
- pyrene (100 mg/kg) – 440 mg/kg

SVOCs are horizontally defined for the NAF area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-3A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

DUP-1-20210701 (parent sample SSHS-B4018-SUB-2-4) exceeded the Restricted Residential SCO for Benzo(b)fluoranthene (1 mg/kg) at 1.1 mg/kg and Indeno (1,2,3-cd)pyrene (0.5 mg/kg) at 0.58 mg/kg. DUP-1-20210701 remains in place from 1.73-3.73 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.27 ft, the current sample depth below final grade is 1.73-3.73 ft. This sample was collected along the BCP Site Boundary, adjacent to off-Site properties.

Exceedances above Restricted Residential SCOs along the BCP property boundary were identified during Addendum 8 Phase 3 through Phase 7. Multiple samples collected during Addendum 8 Phase 3 through Phase 7 are located off-Site beyond the Revised BCP Site Boundary. These samples are included for completeness. As presented in the *Off-Site Area Norfolk Southern Investigation Work Plan Addendum #1 – Interim Data Report* (Geosyntec, 2026h) submitted 27 February 2026 (NYSDEC review pending), select SVOC Restricted Residential SCO exceedances on the NSRC property are not attributable to on-Site sources. Further assessment of the nature and extent of soil contamination onto NSRC property will be discussed in the #c808054 RIR/AA.

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Based on an evaluation of off-Site anthropogenic sources as presented in the *NAF West Soil Sampling Interim Data Report #2* (Geosyntec, 2024j), SVOC Restricted Residential SCO exceedances identified along the western property boundary adjacent to off-Site residential properties likely do not emanate from the Site. Limited approval of the validated data presented in the report was provided by NYSDEC 11 December 2024 (**Appendix A**). Further evaluation of potential emanation from the Site will be addressed as part of the off-Site RI.

Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054.

VOCs

VOCs do not remain in place at concentrations above Restricted Residential SCOs in the NAF area (**Tables 6-2D** and **6-3D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-2E** and **6-3E**. 1,4-dioxane was not detected above Restricted Residential SCOs in the NAF Area. PFOS was detected above the Restricted Residential Guidance Value of 63 ug/kg from 0-2 ft bgs at SSHS-IRM5A2-A8PH4-S30 (**Figure 6-3A**). This sample remains in place along the sidewall of the property line from 0-2 ft bfg, located off-Site beyond the Revised BCP limits adjacent to the NAF West area. Based on an evaluation of off-Site anthropogenic sources as presented in the *NAF West Soil Sampling Interim Data Report #2* (Geosyntec, 2024j), Restricted Residential SCO exceedances identified along the western property boundary adjacent to off-Site residential properties likely do not emanate from the Site. Limited approval of the validated data presented in the report was provided by NYSDEC 11 December 2024 (**Appendix A**). Further evaluation of potential emanation from the Site will be addressed as part of the off-Site RI. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP.

Below Water Table

The nature and extent of COCs below the water table (approximately 16 ft bgs) at the NAF are presented in 2-foot intervals on **Figures 6-3I-AB**. Samples collected below the water table identified concentrations of PCBs, metals, SVOCs and VOCs above NYSDEC Restricted Residential SCOs at the NAF, primarily in the vicinity of AOC-19. These samples remain in place due to the technical impracticability of excavating soils at and below the water table.

PCBs

PCBs were detected above the Restricted Residential SCO (1 mg/kg) at depths from 16-34 ft bfg, below the soil cover system (**Table 6-4A**). The maximum concentration of PCBs above the Restricted Residential SCO below the water table is 13,000 mg/kg from 25.67-27.67 ft bfg at SSHS-B3454-SUB-22-24. PCBs are horizontally defined for the NAF area below the water table

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by the Restricted Residential SCOs depicted on **Figures 6-3I-Q**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

PCB Restricted Residential SCO exceedances in the NAF are not vertically defined at B3920 from 31.85-33.85 ft bfg (12.9 mg/kg). The silty clay aquitard was not encountered at B3920, but was observed at B5301 approximately 60 ft to the south (clay at 30 ft bgs), at B4265 approximately 90 ft to the southwest (clay at 28 ft bgs), and at B4261 approximately 100 ft west (clay at 26 ft bgs). This silty clay aquitard layer vertically defines the PCB exceedances. TSCA level PCB concentrations are primarily located in the vicinity of AOC-19 and are defined within Site #c808022. These TSCA level PCB concentrations are generally collocated with known PCB groundwater impacts located in the vicinity of AOC-19. Residual PCBs may affect groundwater quality; therefore, a groundwater monitoring program will be included in the SMP. As presented in Section 6.2.1, PCB concentrations in groundwater have been observed to generally decrease over time in the NAF since the removal of the source during IRM #5A2. TSCA level PCB concentrations are laterally and vertically defined for the NAF area as shown on **Appendix S** and are discussed further below.

Metals

Metals including arsenic, cadmium, chromium, and nickel were detected at concentrations above Restricted Residential SCOs at depths between 16-18 ft bfg, 30-34 ft bfg and 38-42 ft bfg (**Table 6-4B**). The maximum concentrations of metals above Restricted Residential SCOs below the water table are as follows:

- Arsenic (16 mg/kg) – 58 mg/kg 14.26-16.26 ft bfg at SSHS-DW-15-SUB-14-16
- Cadmium (4.3 mg/kg) – 5.6 mg/kg 30.09-32.09 ft bfg at SSHS-B3852-SUB-30-32
- Chromium (110 mg/kg) – 490 mg/kg 30.09-32.09 ft bfg at SSHS-B3852-SUB-30-32
- Nickel (310 mg/kg) – 380 mg/kg 30.09-32.09 ft bfg at SSHS-B3852-SUB-30-32

Metals are horizontally defined for the NAF area from 16-18 ft bfg, 30-34 ft bfg and 38-42 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-3H, 6-3P-Q** and **6-3T-U**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2. Arsenic above the Restricted Residential SCO is not vertically defined at SSHS-B3646A-SUB-38-40 (17 mg/kg) at 38.04-40.04 ft bfg. The silty clay aquitard was encountered at 38 ft bgs at B3646A. This silty clay aquitard layer vertically defines the Arsenic exceedance.

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SVOCs

Indeno(1,2,3-cd)pyrene was detected at 0.58 mg/kg, above Restricted Residential SCO (0.5 mg/kg) at 16.42 ft bfg (**Table 6-4C**) for sample SSHS-IRM5A2-S733. SVOCs are horizontally defined for the NAF area from 16-18 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-3I**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.**

VOCs

VOCs including PCE and TCE were detected at concentrations above Restricted Residential SCOs at depths between 24-30 ft bfg (**Table 6-4D**). The maximum concentrations of VOCs above Restricted Residential SCOs below the water table are as follows:

- TCE (21 mg/kg) – 170J mg/kg 25.85-27.85 ft bfg at SSHS-B3920-SUB-24-26
- PCE (19 mg/kg) – 40 mg/kg 25.67-27.67 ft bfg at SSHS-B3454-SUB-22-24

VOCs are horizontally defined for the NAF area from 24-30 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-3M-O**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the NAF area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. VOC exceedances in the NAF are vertically defined at 30 ft bfg. VOC Restricted Residential exceedances are generally collocated with known VOC groundwater impacts located in the vicinity of AOC-19. Residual VOCs may affect groundwater quality; therefore, a groundwater monitoring program will be included in the SMP. As presented in Section 6.2.4, VOC concentrations in groundwater have been observed to generally decrease over time in the NAF since the removal of the source during IRM #5A2.

Emerging Contaminants

Emerging contaminant results are presented in **Table 6-2E**. 1,4-dioxane was not detected above its Restricted Residential SCOs below the water table in the NAF Area. PFOS and PFOA were not detected above the Restricted Residential Guidance Values below the water table in the NAF Area.

Residual Contamination

TSCA Level PCBs

Total PCB concentrations at or above TSCA levels of 50 mg/kg are present from 16-30 ft bfg in the NAF area (**Table 6-3A** and **6-4A**). These samples will be managed under the SMP. These concentrations range from 65.1 to 13,000 mg/kg. The limits of TSCA level PCBs are horizontally defined for the NAF area from 16-30 ft as shown on **Figures 6-3I-O**. The samples that define the lateral and vertical delineation of these TSCA exceedances are provided on **Appendix S**. These TSCA level PCB concentrations are primarily located in the vicinity of AOC-19 and are defined

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within Site #c808022. These samples remain in place due to the technical impracticability of excavating soils at and below the water table. TSCA level PCB concentrations are present at the following samples and depths:

- 16-18 ft bfg at S729, B3884, B716, B717, B3264, B715, and B709
  - SSHS-IRM5A2-S729 at 66 mg/kg (17.85 ft bfg)
  - SSHS-B3884-SUB-14-16 at 121 mg/kg (17.84-19.84 ft bfg)
  - SSHS-B3266-SUB-14-16 at 156 mg/kg (17.47-19.47 ft bfg)
  - SSHS-IRM5A2-B716 at 208 mg/kg (17.87 ft bfg)
  - SSHS-IRM5A2-B717 at 235 mg/kg (17.85 ft bfg)
  - SSHS-B3264-SUB-14-16 at 266 mg/kg (17.21-19.21 ft bfg)
  - SSHS-IRM5A2-B715 at 311 mg/kg (17.83 ft bfg)
  - SSHS-IRM5A2-B709 at 590 mg/kg (17.33 ft bfg)
- 18-20 ft bfg at B3264A, B3266A, B3884, B3266, B714, B3454
  - SSHS-B3264A-SUB-16-18 at 65.1 mg/kg (19.2-21.2 ft bfg)
  - SSHS-B3266A-SUB-16-18 at 117.4 mg/kg (19.47-21.47 ft bfg)
  - SSHS-B3884-SUB-14-16 at 121 mg/kg (17.84-19.84 ft bfg)
  - SSHS-B3266-SUB-14-16 at 156 mg/kg (17.47-19.47 ft bfg)
  - SSHS-B3264-SUB-14-16 at 266 mg/kg (17.21-19.21 ft bfg)
  - SSHS-IRM5A2-B714 at 710 mg/kg (18.15 ft bfg)
  - SSHS-B3454-SUB-16-18 at 2,011 mg/kg (19.67-21.67 ft bfg)
- 20-22 ft bfg at B3264A, B3266A and B3454
  - SSHS-B3264A-SUB-16-18 at 65.1 mg/kg (19.2-21.2 ft bfg)
  - SSHS-B3266A-SUB-16-18 at 117.4 mg/kg (19.47-21.47 ft bfg)
  - SSHS-B3454-SUB-18-20 at 844 mg/kg (21.67-23.67 ft bfg)
  - SSHS-B3454-SUB-16-18 at 2,011 mg/kg (19.67-21.67 ft bfg)
- 22-24 ft bfg at B3454
  - SSHS-B3454-SUB-18-20 at 844 mg/kg (21.67-23.67 ft bfg)
- 24-26 ft bfg at B3920 and B3454
  - SSHS-B3920-SUB-24-26 at 2,430 mg/kg (25.85-27.85 ft bfg)
  - SSHS-B3454-SUB-22-24 at 13,000 mg/kg (25.67-27.67 ft bfg)
- 26-28 ft bfg at B3920 and B3454
  - SSHS-B3920-SUB-26-28 at 930 mg/kg (27.85-29.85 ft bfg)
  - SSHS-B3920-SUB-24-26 at 2,430 mg/kg (25.85-27.85 ft bfg)
  - SSHS-B3454-SUB-22-24 at 13,000 mg/kg (25.67-27.67 ft bfg)
- 28-30 ft bfg at B3920
  - SSHS-B3920-SUB-28-30 at 176.6 mg/kg (29.85-31.85 ft bfg)
  - SSHS-B3920-SUB-26-28 at 930 mg/kg (27.85-29.85 ft bfg)

Potential to Exhibit the Characteristic of Metal Toxicity

Metal concentrations with the potential to exhibit the characteristic of toxicity including lead, mercury, and chromium (III + VI) are present in the NAF area from 0-8, 14-18, and 30-34 ft bfg (**Tables 6-2B**, **6-3B,** and **6-4B**). The limits are horizontally defined for the NAF area from 0-8, 14-

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18, and 30-34 ft bfg as shown on **Figures 6-3A-Q**. The samples that define the lateral and vertical delineation of metal concentrations with the potential to exhibit the characteristic of toxicity are provided on **Appendix S**. Multiple samples collected as part of IRM #5A2 Addendum 8 Phase 3 are located beyond or adjacent to the Revised BCP Site on NSRC property. As presented in the *Off-Site Area Norfolk Southern Investigation Work Plan Addendum #1 – Interim Data Report* (Geosyntec, 2026h) submitted 27 February 2026 (NYSDEC review pending), select metals and SVOC Restricted Residential SCO exceedances on the NSRC property are not attributable to on-Site sources. Further assessment of the nature and extent of soil contamination onto NSRC property will be discussed in the #c808054 RIR/AA. Based on an evaluation of off-Site anthropogenic sources as presented in the *NAF West Soil Sampling Interim Data Report #2* (Geosyntec, 2024j), SVOC and metals Restricted Residential SCO exceedances identified along the western property boundary adjacent to off-Site residential properties likely do not emanate from the Site. Limited approval of the validated data presented in the report was provided by NYSDEC 11 December 2024 (**Appendix A**). Further evaluation of potential emanation from the Site will be addressed as part of the off-Site RI. These samples are included for completeness. Metals exceedances are present at the following samples and depths:

- 0-2 ft bfg at A8PH3-S5, A8PH7-S5, A8PH5-S13, and A8PH5-S17. These samples are located off-Site beyond the Revised BCP Site Boundary.
    - Chromium (III+VI) at 120 mg/kg (screening value of 100 mg/kg) at A8PH3-S5 (0-2 ft bfg)
    - Lead at 1,100 mg/kg (screening value of 1,000 mg/kg) at A8PH5-S17 (0-2 ft bfg)
    - Lead at 2,600 mg/kg (screening value of 1,000 mg/kg) at A8PH5-S13 (0-2 ft bfg)
- Lead at 38,000 mg/kg (screening value of 1,000 mg/kg) at A8PH7-S5 (0-2 ft bfg) 2-4 ft bfg at A8PH3A1-S14 and A8PH3A1-S3. These samples are located off-Site beyond the Revised BCP Site Boundary.
    - Mercury at 11 mg/kg (screening value of 4 mg/kg) at A8PH3A1-S14 (2-4 ft bfg)
    - Mercury at 14 mg/kg (screening value of 4 mg/kg) at A8PH3A1-S3 (2-4 ft bfg)
- 4-6 ft bfg at A3-S412 and A8PH3A1-S19
    - Mercury at 4.4 mg/kg (screening value of 4 mg/kg) at A3-S412 (4.61 ft bfg)
        - This sample was collected along the southern border between the NAF and FFC. Excavation of this exceedance was not feasible due to the proximity of the safety netting poles. The depth of the foundation pole was suspected to be at 6 ft bgs based on conversations with ECSD and further excavation could have impacted the integrity of the poles. TCLP samples were collected to document the soil was not hazardous. This information was provided to NYSDEC on 31 August 2022 along with evaluation of surrounding soil quality to delineate the extent of mercury contamination. NYSDEC accepted the evaluation and approved leaving A3-S412 in place below the cover system for long term site management on 15 September 2022.
    - Mercury at 7.1 mg/kg (screening value of 4 mg/kg) at A8PH3A1-S19 (4-6 ft bfg)
        - This sample is located off-Site beyond the Revised BCP Site Boundary.

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- 6-8 ft bfg at FISR-S4
    - Mercury at 9.4 mg/kg (screening value of 4 mg/kg) at FISR-S4 (7.06 ft bfg)
        - This sample was collected within the trench box excavation (Area 3) to remove Segment 7 and FIS on the southern portion of the NAF, extending approximately 10-15 feet onto the FFC. NYSDEC was notified of this exceedance on 1 July 2022 and a response was provided on 11 July 2022 providing options to address the IRM action level exceedance of mercury. Unisys opted to complete soil sampling to delineate, laterally and vertically, the extent of non-hazardous mercury as remaining contamination for long term site management, requested to the Agency on 22 July 2022. Agency approved to complete the borings to delineate Site sample FISR-S4 was provided on 29 July 2022. Analytical data from the completed soil borings to delineate FISR-S4 was submitted to NYSDEC on 20 September 2022 and accepted the sample location to remain in place on 24 February 2023.
- 30-32 ft bfg at SSHS-B3852
    - Chromium (III+VI) at 490 mg/kg (screening value of 100 mg/kg) at SSHS-B3852-SUB-30-32 (30.09-32.09 ft bfg)
        - Sample remains in place due to the technical impracticability of excavating soils at and below the water table.
- 32-34 ft bfg at SSHS-B3852
    - Chromium (III+VI) at 490 mg/kg (screening value of 100 mg/kg) at SSHS-B3852-SUB-30-32 (30.09-32.09 ft bfg)
        - Sample remains in place due to the technical impracticability of excavating soils at and below the water table.

Protection of Groundwater

As discussed in Section 6.2, VOCs and PCBs are detected in groundwater above TOGS standards downgradient of AOC-19. VOCs remaining in place at depths below the water table at concentrations above the PoG SCO include PCE and TCE. An isolated acetone PoG SCO exceedance was detected at SSHS-B3646A-SUB-20-22. PoG SCO exceedances for PCE and TCE below the water table have been delineated by RI soil borings advanced to a silty clay aquitard that is the lower bound of the water-bearing zone. PCE and TCE exceedances are limited to near the vicinity of the former drum nest removed during the IRM #5A2 excavation at SSHS-B3454 and SSHS-B3920. TCE concentrations above the PoG SCO of 0.47 mg/kg range from 2.5 mg/kg to 170J mg/kg. PCE remains above the PoG SCO of 19 mg/kg with a concentration of 40 mg/kg at B3454 at 25.67 to 27.67 feet bfg. PCB exceedances of the PoG SCOs below the water table are primarily limited to the same approximate area as the VOC exceedances, as well as in the southeast corner of the NAF at B572A. PCB concentration above the PoG SCO and below TSCA levels range from 15.4 to 36.6 mg/kg. Soils with exceedances of PoG SCOs remaining in place below the water table include PCBs above 50 mg/kg below the former drum nest (AOC-19) with concentrations ranging from 65.1 to 13,000 mg/kg. These soils were not removed due to technical impracticability of excavating soils below the water table (Geosyntec, 2025).

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Exceedances of PoG SCOs for metals and SVOCs in subsurface and deep soils presented in **Tables 6-3C** and **6-4C**, respectively, are evaluated based on groundwater quality data and found to not be impacting groundwater above TOGS groundwater standards.

6.3.2 Football Field Complex

Soil conditions remaining in place within the FFC area were evaluated for PCBs, metals, SVOCs, VOCs, and emerging contaminants relative to the Restricted Residential SCOs and applicable guidance values. Based on post-IRM conditions, residual COCs for PCBs, metals, SVOCs, and PFOS remain in place in limited areas. Remaining exceedances are delineated within the Revised BCP Site Boundary, identified in areas adjacent to but outside the Revised BCP Site Boundary, or inferred to extend to the Site boundary. These areas will be further evaluated as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Residual exceedances within the upper 2 ft are limited, and where present on-Site, are to be managed under the site management controls, including the ISMP and future SMP.

A detailed summary demonstrating investigation of AOCs, including data collection, potential source areas, and impacted media was previously presented for each AOC within the FFC in Section 5. AOCs in the FFC Area include AOC-2 (Pre-1979 Combined Industrial/Storm Sewer), AOC-3 (1979 Storm Sewer), AOC-6 (Concrete Vaults), AOC-8 (Westinghouse Transformer Spill near Building 28A), AOC-9 (Oil Storage and Handling), AOC-10B (Contaminated Subsurface Soils), AOC-10C (Contaminated Subsurface Soils), AOC-11 (VOC- and Petroleum-Impacted Groundwater), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), and AOC-16 (Machine Shop Area). Restricted Residential SCO exceedances are widespread across the FFC and are generally associated with historical fill materials. A source area was encountered at the former slide rail area and is attributed to AOC-3 (1979 Storm Sewer). The provided Restricted Residential SCO limits for the FFC area demonstrate delineation of the nature and extent of these AOCs that are in the FFC.

As shown on Figures **6-4A-X**, Restricted Residential SCO exceedances remaining in place generally form a laterally continuous zone extending across the multiple AOCs located within the FFC. The lateral limits of these Restricted Residential SCO exceedances are either defined by soil borings and IRM samples remaining in place below Restricted Residential SCOs or extend to the Revised BCP Site Boundary where limits are inferred. For areas where samples remaining in place are below Restricted Residential SCOs, the extent is considered defined. Where Restricted Residential SCO exceedances are not defined within the Revised BCP Site boundary, the limit is depicted up to the boundary and shown as inferred. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Given the widespread occurrence of Restricted Residential SCO exceedances across the FFC Area, the depicted lateral extent is intended to be conservative and provide a limit for the multiple Site COCs (i.e. PCBs, metals, SVOCs, VOCs, and emerging contaminants). Accordingly, the mapped limits may include areas excavated as part of an IRM and encompass portions of multiple AOCs where exceedances are laterally contiguous. Vertically, Restricted Residential SCO exceedances in the FFC are limited to 44 ft bfg. IRM activities have removed a substantial portion of exceedances above the water table.

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Remaining impacts are limited in areal extent and depth and do not represent a significant ongoing source following remediation. Restricted Residential SCO exceedances are adequately delineated to support RI objectives, including decision-making regarding remedial actions for the Revised BCP Site, identification of COC sources and migration pathways, evaluation of actual or potential receptors, and completion of a qualitative human health risk assessment. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP.

A summary of these defining samples or inferred limits is provided by depth bfg for the FFC area in **Appendix S**. Limits are presented for the Site cardinal directions for each depth (i.e. north, east, south, and west). Site Cardinal directions are relative to "Site north" orientation which designates the EHS Building as north, the NSRC railroad property as east, the STCC property as south, and Main Street as west. Limits that are inferred up to the Revised BCP Site boundary are noted with rationale provided where applicable. Each depth interval is also evaluated to present samples which define the vertical extent of exceedances.

Above the Water Table

The nature and extent of COCs remaining in place above the water table in the FFC are presented in 2-foot intervals in ft bfg on **Figures 6-4A-H**. In the FFC area, the water table is assumed at 16 ft bfg. The nature and extent of COCs in soil in the FFC has been delineated through SC, RI, and FFC PDI activities. COC impacts in the soil cover, 0-2 ft bgs, in the southwest portion of the FFC were removed as part of IRM #1 in Summer 2017 (Geosyntec, 2019e). Further removal of COC impacts were completed during IRM #3 in Summer 2019 (Geosyntec, 2024h) and during IRM #4, IRM #4A, IRM #5, and IRM #5A3 between June 2020 and August 2022 in preparation for ECSD capital improvements in the FFC (Geosyntec, 2026d). The FFC EC soil cover system includes NYSDEC-approved imported fill placed during the IRMs and final cover installed by ECSD as part of the EHS Stadium Project.

PCBs

PCBs remain in place at concentrations above the Restricted Residential SCO (1 mg/kg) at depths from 0-16 ft bfg (**Tables 6-2A** and **6-3A**). The maximum concentration of PCBs in place above the water table is 285.3 mg/kg at SSHS-B234A-SUB-6-8. This sample was excavated to 7.8 ft bfg. The material represented by the composite sample collected from 6-8 ft bgs was removed, with the exception of an approximately 0.2 ft thick interval remaining at the base of the excavation. Accordingly, any residual contamination is limited to a thin, discontinuous interval and does not constitute a meaningful remaining source area in terms of mass or vertical extent. As such, the remaining material does not represent a significant or laterally extensive source of contamination from 6-8 ft bfg at B234A.

PCBs are horizontally defined for the FFC area from 0-16 ft bfg by the Restricted Residential SCO depicted on **Figures 6-4A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site

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#c808054. There are PCB concentrations at or above the TSCA level of 50 mg/kg remaining in place from 6-8 and 14-16 ft bfg in the FFC Area. TSCA level PCB concentrations are discussed further below. From 0-2 ft bfg, exceedances of Restricted Residential SCOs remain in place within the soil cover system at the following locations:

- IRM4-S021 (9.67 mg/kg) at 0.75 ft bfg and IRM4-S183S (4.86 mg/kg) at 1.65 ft bfg. These samples are located at the south side of the FFC, adjoining the high school building, but below a sidewalk (hardscape cover).
- SSHS-ISMP-ES-S4 (1.047 mg/kg) at 1.72 ft bfg and B3472 (1.78 mg/kg) at 0.17-2 ft bfg. These samples are located below the sidewalk (hardscape cover) on the western side of the FFC.

Restricted Residential SCO exceedances remaining from 0-2 bfg are defined by samples remaining in place or IRM excavation limits (**Figure 6-4A**). Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP.

Metals

Metals including arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, and nickel remain in place at concentrations above Restricted Residential SCOs at depths from 2-16 ft bfg, below the soil cover system (**Tables 6-2B** and **6-3B**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of metals above Restricted Residential SCOs left in place are as follows:

- Arsenic (16 mg/kg) – 110 mg/kg 6.17 ft bfg at SSHS-IRM4-P18
- Barium (400 mg/kg) – 1,600B mg/kg 6.23 ft bfg at SSHS-IRM5-PIPE 38 BOT
- Cadmium (4.3 mg/kg) – 14 mg/kg 5.02 ft bfg at SSHS-IRM5-PIPE 40 S2B
- Chromium (110 mg/kg) – 2,200 mg/kg 15.53 ft bfg at SSHS-IRM5-P187 BOT 8
- Copper (270 mg/kg) –9,300 J mg/kg 6-8 ft bfg at SSHS-B2788
- Lead (400 mg/kg) – 3,800 mg/kg 8.75 ft bfg at SSHS-IRM5-DW3 W
- Manganese (2,000 mg/kg) – 3,000 mg/kg 12.54 ft bfg at SSHS-IRM3-S143
- Mercury (0.81 mg/kg) – 14 mg/kg 6.21-8.21 ft bfg at SSHS-B2026-SUB-6-8
- Nickel (310 mg/kg) – 70,000 mg/kg 4.99 ft bfg at SSHS-IRM5-PIPE 40 S2B

No metals above the Restricted Residential SCO remain in place in native soil from 0-2 ft bfg for the FFC Area. SCV sampling of imported topsoil and structural fill in the FFC detected arsenic above Restricted Residential SCOs between 0.17-2 ft bfg in the northern, western and eastern portions of the FFC at IRM5-SCV17 (57 mg/kg), IRM5-SCV20 (21J mg/kg), IRM5-SCV4 (20 mg/kg), and IRM5-SND-SCV3 (44 mg/kg) (**Figure 6-4A**). Those exceedances are sporadic, spatially limited and bounded, and are associated with materials imported to the Site from borrowed sources. SCV sampling detected arsenic at 44 mg/kg, above the Restricted Residential SCO, in a field duplicate of a sample imported sand mixed with structural fill collected from 1.58-2.03 ft bfg. The structural fill used for backfilling as part of the cover system was approved for import by the NYSDEC; however, chemical analyses were not required based on sieve analysis

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per DER-10 5.4(e)5. The highest arsenic concentration reported for all other samples of imported sand was 6.8 mg/kg. Accordingly, the installed soil cover is considered to meet the requirements of the approved IRM #5 Work Plan by effectively isolating impacted materials and controlling exposure pathways. RR SCO exceedances will remain in place and be managed under the ISMP until a final SMP is approved.

Metals are horizontally defined for the FFC area from 2-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-4B-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** Chromium above the Restricted Residential SCO at SSHS-IRM5-P187 Bot 9 (760 mg/kg) at 15.12 ft bfg and SSHS-IRM5-P187 Bot 8 (2,200 mg/kg) at 15.53 ft bfg are not vertically defined above Restricted Residential SCOs. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054.

SVOCs

SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2C** and **6-3C**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of SVOCS above Restricted Residential SCOs left in place were detected from 2-4 ft bfg at SSHS-B4164-SUB-2-4. The concentrations are as follows:

- benz(a)anthracene (1 mg/kg) – 140 mg/kg
- benzo(a)pyrene (1 mg/kg) – 76 mg/kg
- benzo(b)fluoranthene (1 mg/kg) – 100 mg/kg
- benzo(k)fluoranthene (3.9 mg/kg) – 33 mg/kg
- chrysene (3.9 mg/kg) – 120 mg/kg
- dibenz(a,h)anthracene (0.33 mg/kg) – 16 mg/kg
- fluoranthene (100 mg/kg) – 260 mg/kg
- indeno(1,2,3-cd)pyrene (0.5 mg/kg) – 46 mg/kg
- phenanthrene (100 mg/kg) – 350 mg/kg
- pyrene (100 mg/kg) – 270 mg/kg

SVOCs remain in place above the Restricted Residential SCOs from 0-2 ft bfg on the west side of the FFC. Indeno (1,2,3-cd)pyrene remains in place above the Restricted Residential SCO of 0.5 mg/kg at SSHS-ISMP-ES-B7 (0.55 mg/kg). This sample is beneath the sidewalk hardscape cover. Indeno (1,2,3-cd)pyrene remains in place above the Restricted Residential SCO of 0.5 mg/kg at ISMP-EUR-BOT1 (0.53 mg/kg). This is a bottom sample from the ISMP excavation to extend the water line from Field House #1 to a fire hydrant.

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SCV sampling of imported topsoil and structural fill in the FFC detected SVOCs above Restricted Residential SCOs at 0.17-1 ft bfg in eastern portion of the FFC at sample IRM5-SCV17 for benz(a)anthracene (1.7 mg/kg), benzo(a)pyrene, (1.5 mg/kg) benzo(b)fluoranthene (1.5 mg/kg), and indeno (1,2,3-cd)pyrene (0.84 mg/kg). Those exceedances are sporadic, spatially limited and bounded, and are associated with materials imported to the Site from borrowed sources. Accordingly, the installed soil cover is considered to meet the requirements of the approved IRM #5 Work Plan by effectively isolating impacted materials and controlling exposure pathways. RR SCO exceedances will remain in place and be managed under the ISMP until a final SMP is approved.

SVOCs are horizontally defined for the FFC area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-4A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** Restricted Residential SCO exceedances remaining from 0-2 bfg are delineated by samples remaining in place or IRM excavation limits (**Figure 6-4A**). Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP.

VOCs

No VOCs remain in place at concentrations above Restricted Residential SCOs in the FFC area (**Tables 6-2D** and **6-3D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-2E** and **6-3E**. 1,4-dioxane was not detected above Restricted Residential SCOs in the FFC Area. PFOS and PFOA were not detected above the Restricted Residential Guidance Values in the FFC Area.

Below Water Table

The nature and extent of COCs below the water table (approximately 16 ft bgs) at the FFC are presented in 2-ft intervals on **Figures 6-4I-X**. RI investigations of soil below the water table identified concentrations of PCBs, metals, SVOCs, and VOCs above NYSDEC Restricted Residential SCOs at the FFC area.

PCBs

PCBs were detected above the Restricted Residential SCO (1 mg/kg) at depths from 16-44 ft bfg, below the soil cover system (**Table 6-4A**). Due to the technical impracticability of excavating soils at and below the water table, total PCBs remain in place in portions of IRM #4A. The maximum concentration of PCBs above the Restricted Residential SCO below the water table is 19,240 mg/kg from 24.2-26.2 ft bfg at SSHS-B3564A-SUB-24-26. PCBs are horizontally defined for the FFC area below the water table by the Restricted Residential SCO depicted on **Figures 6-4I-V**. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former

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Sperry Remington Site – North Portion 2 Site #c808054. PCB Restricted Residential SCO exceedances in the FFC are not vertically defined at B645A from 40.41-42.41 ft bfg (4.1 mg/kg). The silty clay aquitard layer was encountered at B645A at 34 ft bgs. TSCA level PCB concentrations are primarily located in the vicinity of the former slide rail area and are defined within Site #c808022. These TSCA level PCB concentrations are generally collocated with known PCB groundwater impacts located in the vicinity of the former slide rail area. Cross sections illustrating the former slide rail area, sub grade excavation contours, PCBs in soils left in place, and monitoring wells are included in **Appendix P**.

Residual PCBs may continue to impact groundwater quality; therefore a groundwater monitoring program will be included in the SMP. TSCA level PCB concentrations are discussed further below.

Metals

Metals, including manganese and nickel, were detected at concentrations above Restricted Residential SCOs at depths between 20-26 ft bfg, below the cover system (**Table 6-4B**). The maximum concentrations of metals above Restricted Residential SCOs are as follows:

- Manganese (2,000 mg/kg) – 2,100 mg/kg 22.1-24.1 ft bfg at SSHS-B3870-SUB-22-24
- Nickel (310 mg/kg) – 730 mg/kg 20.14-22.14 ft bfg at SSHS-B3556-SUB-20-22

Metals are horizontally defined for the FFC area from 20-26 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-4K-M**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2.

SVOCs

SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above Restricted Residential SCOs at depths from 16 - 20 ft. bfg, below the soil cover system (**Tables 6-4C**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of SVOCS above Restricted Residential SCOs left in place were detected at 18-20 ft bfg at SSHS-B4164-SUB-18-20. The concentrations are as follows:

- benz(a)anthracene (1 mg/kg) – 3.3 mg/kg
- benzo(a)pyrene (1 mg/kg) – 2 mg/kg
- benzo(b)fluoranthene (1 mg/kg) – 2.5 mg/kg
- dibenz(a,h)anthracene (0.33 mg/kg) – 0.39 mg/kg
- indeno(1,2,3-cd)pyrene (0.5 mg/kg) – 1.3 mg/kg

SVOCs are horizontally defined for the FFC area from 16-20 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-4I-J**. A summary of samples that define the Restricted Residential

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SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** SSHS-B4164-SUB-18-20 from 18-20 ft bfg is not vertically delineated for SVOCs. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

VOCs

No VOCs were detected above the Restricted Residential SCOs for the FFC area (**Table 6-4D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-4E**. 1,4-dioxane was not detected above its Restricted Residential SCOs in the FFC Area. PFOA and PFOS were not detected above the Restricted Residential Guidance Values in the FFC Area.

Residual Contamination

TSCA Level PCBs

Total PCB concentrations at or above TSCA levels of 50 mg/kg are present from 6-38 ft bfg in the FFC area (**Tables 6-3A,** and **6-4A**). These concentrations range from 62.8 to 19,240 mg/kg. The limits of TSCA level PCBs are horizontally defined for the FFC area from 6-8 ft bfg and 14-38 ft bfg by the TSCA limits depicted on **Figure 6-4D** and **Figures 6-4H-S**. A summary of samples that define the TSCA limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the FFC area in **Appendix S.** These TSCA level PCB concentrations are primarily located in the vicinity of the former slide rail area and are defined within the Revised BCP Site. Excavations were completed to the water table during IRM #3 (Geosyntec, 2024h) and during IRM #4 and IRM #4A (Geosyntec, 2026d). Due to the technical impracticability of excavating soils at and below the water table as well as between the required offset of the slide rail to the building foundation to maintain the structural integrity of the building TSCA level PCBs remain in place in portions of the FFC area. Cross sections illustrating the former slide rail area, sub grade excavation contours, PCBs in soils left in place, and monitoring wells are included in **Appendix P**.

Total PCBs above TSCA levels are horizontally and vertically delineated to the north, west and east. Delineation to the south is impracticable, as it is limited by the EHS building. TSCA level PCB concentrations are present at the following samples and depths:

- 6-8 ft bfg at B234A (removed to 7.8 ft bfg)
    - SSHS-B234A-SUB-6-8 at 285.3 mg/kg (6-8 ft bfg)
        - Excavation at this location was advanced to approximately 7.8 ft bgs. The material represented by the composite sample collected from 6-8 ft bgs was removed, with the exception of an approximately 0.2 ft thick interval remaining at the base of the excavation. Accordingly, any residual contamination is limited to a thin, discontinuous interval and does not

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constitute a meaningful remaining source area in terms of mass or vertical extent. As such, the remaining material does not represent a significant or laterally extensive source of contamination 6-8 ft bfg at B234A.

- 8-10 ft bfg at IRM4-S124N2 at 101.6 mg/kg (9.35 ft bfg). This sample remains in place due to the required offset of the slide rail to the building foundation to maintain the structural integrity of the building system (**Appendix P**).
- 10-12 ft bfg at IRM4-S124 at 50.6 mg/kg (10.11 ft bfg). This sample remains in place due to the required offset of the slide rail to the building foundation to maintain the structural integrity of the building system (**Appendix P**).
- 12-14 ft bfg at IRM4-S171 and IRM4-S147. These samples remain in place due to the required offset of the slide rail to the building foundation to maintain the structural integrity of the building system (**Appendix P**)
    - SSHS-IRM4-S171-12-14 at 114.8 mg/kg (13.95 bfg)
    - SSHS-IRM4-S147-10-12 at 251.2 mg/kg (12.27 ft bfg)
- 14-16 ft bfg at IRM4A-B309-BOT-BOT, and IRM4A-B040-BOT-BOT. These samples remain in place due to the technical impracticability of excavating soils at and below the water table.
    - IRM4A-B039-BOT-BOT at 186 mg/kg (15.94 ft bfg)
    - IRM4A-B040-BOT-BOT at 487 mg/kg (15.9 ft bfg)
- 16-18 ft bfg at B3870, IRM4A-MOAB BOT 3, B3871, B3570, and B3564.
    - SSHS-B3870-SUB-16-18 at 175 mg/kg (16.1-18.1 ft bfg)
    - IRM4A-MOAB BOT 3 at 433.8 mg/kg (16.56 ft bfg)
    - SSHS-B3871-SUB-16-18 at 667 mg/kg (16.16-18.16 ft bfg)
    - SSHS-B3570-SUB-16-18 at 5,900 mg/kg (16.19-18.19 ft bfg)
    - SSHS-B3564-SUB-16-18 at 12,100 mg/kg (16.2-18.2 ft bfg)
- 18-20 ft bfg at B3871, B3870, B3570, and B3564
    - SSHS-B3871-SUB-18-20 at 361.1 mg/kg (18.16-20.16 ft bfg)
    - SSHS-B3871-SUB-16-18 at 667 mg/kg (16.16-18.16 ft bfg)
    - SSHS-B3870-SUB-18-20 at 930 mg/kg (18.1-20.1 ft bfg)
    - SSHS-B3570-SUB-18-20 at 2,440 mg/kg (18.19-20.19 ft bfg)
    - SSHS-B3564-SUB-18-20 at 3,656 mg/kg (18.2-20.2 ft bfg)
    - SSHS-B3570-SUB-16-18 at 5,900 mg/kg (16.19-18.19 ft bfg)
    - SSHS-B3564-SUB-16-18 at 12,100 mg/kg (16.2-18.2 ft bfg)
- 20-22 ft bfg at B3870, B3570, B3564, and B3871
    - SSHS-B3870-SUB-20-22 at 175.6 mg/kg (20.1-22.1 ft bfg)
    - SSHS-B3871-SUB-18-20 at 361.1 mg/kg (18.16-20.16 ft bfg)
    - SSHS-B3870-SUB-18-20 at 930 mg/kg (18.1-20.1 ft bfg)
    - SSHS-B3564-SUB-20-22 at 2,124 mg/kg (20.2-22.2 ft bfg)
    - SSHS-B3564-SUB-18-20 at 3,656 mg/kg (18.2-20.2 ft bfg)
    - SSHS-B3570-SUB-20-22 at 3,990 mg/kg (20.19-22.19 ft bfg)
- 22-24 ft bfg at B645, B3870, B3563, B3564 and B3570
    - SSHS-B645A-SUB-22-24 at 100.3 mg/kg (22.41-24.41 ft bfg)
    - SSHS-B3870-SUB-22-24 at 148.5 mg/kg (22.1-24.1 ft bfg)

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  - SSHS-B3870-SUB-20-22 at 175.6 mg/kg (20.1-22.1 ft bfg)
  - SSHS-B3563-SUB-22-24 at 547.8 mg/kg (22.37-24.37 ft bfg)
  - SSHS-B3564-SUB-22-24 at 1,094 mg/kg (22.2-24.2 ft bfg)
  - SSHS-B3564-SUB-20-22 at 2,124 mg/kg (20.2-22.2 ft bfg)
  - SSHS-B3570-SUB-22-24 at 2,850 mg/kg (22.19-24.19 ft bfg)
  - SSHS-B3570-SUB-20-22 at 3,990 mg/kg (20.19-22.19 ft bfg)
- 24-26 ft bfg at B645, B3870, B3563, B3570, and B3564
  - SSHS-B645A-SUB-22-24 at 100.3 mg/kg (22.41-24.41 ft bfg)
  - SSHS-B3870-SUB-22-24 at 148.5 mg/kg (22.1-24.1 ft bfg)
  - SSHS-B3870-SUB-24-26 at 215.5 mg/kg (24.1-26.1 ft bfg)
  - SSHS-B3563A-SUB-24-26 at 306.6 mg/kg (24.37-26.37 ft bfg)
  - SSHS-B3563-SUB-22-24 at 547.8 mg/kg (22.37-24.37 ft bfg)
  - SSHS-B3570-SUB-24-26 at 621 mg/kg (24.19-26.19 ft bfg)
  - SSHS-B645A-SUB-24-26 at 823 mg/kg (24.41-26.41 ft bfg)
  - SSHS-B3564-SUB-22-24 at 1,094 mg/kg (22.2-24.2 ft bfg)
  - SSHS-B3570-SUB-22-24 at 2,850 mg/kg (22.19-24.19 ft bfg)
  - SSHS-B3564A-SUB-24-26 at 19,240 mg/kg (24.2-26.2 ft bfg)
- 26-28 ft bfg at B3870, B3563A, B645A, B3570, and B3564A
  - SSHS-B3870-SUB-24-26 at 215.5 mg/kg (24.1-26.1 ft bfg)
  - SSHS-B3563A-SUB-24-26 at 306.6 mg/kg (24.37-26.37 ft bfg)
  - SSHS-B3563A-SUB-26-28 at 581 mg/kg (26.37-28.37 ft bfg)
  - SSHS-B3570-SUB-24-26 at 621 mg/kg (24.19-26.19 ft bfg)
  - SSHS-B645A-SUB-24-26 at 823 mg/kg (24.41-26.41 ft bfg)
  - SSHS-B3570-SUB-26-28 at 4,560 mg/kg (26.19-28.19 ft bfg)
  - SSHS-B3564A-SUB-24-26 at 19,240 mg/kg (24.2-26.2 ft bfg)
- 28-30 ft bfg at B3570 and B3563A
  - SSHS-B3570-SUB-28-30 at 69.6 mg/kg (28.19-30.19 ft bfg)
  - SSHS-B3563A-SUB-26-28 at 581 mg/kg (26.37-28.37 ft bfg)
  - SSHS-B3563A-SUB-28-30 at 1,411 mg/kg (28.37-30.37 ft bfg)
  - SSHS-B3570-SUB-26-28 at 4,560 mg/kg (26.19-28.19 ft bfg)
- 30-32 ft bfg at B3570 and B3563A
  - SSHS-B3570-SUB-28-30 at 69.6 mg/kg (28.19-30.19 ft bfg)
  - SSHS-B3570-SUB-30-32 at 86.4 mg/kg (30.19-32.19 ft bfg)
  - SSHS-B3563A-SUB-28-30 at 1,411 mg/kg (28.37-30.37 ft bfg)
- 32-34 ft bfg at B3870, B3570, and B4011
  - SSHS-B3870-SUB-32-34 at 62.8 mg/kg (32.1-34.1 ft bfg)
  - SSHS-B3570-SUB-30-32 at 86.4 mg/kg (30.19-32.19 ft bfg)
  - SSHS-B4011-SUB-32-34 at 88.1 mg/kg (32.1-34.1 ft bfg)
  - SSHS-B3570-SUB-32-34 at 104.2 mg/kg (32.19-34.19 ft bfg)
- 34-36 ft bfg at B3570, B4011, B3563A, B3570, B645
  - SSHS-B3870-SUB-32-34 at 62.8 mg/kg (32.1-34.1 ft bfg)
  - SSHS-B4011-SUB-32-34 at 88.1 mg/kg (32.1-34.1 ft bfg)
  - SSHS-B3563A-SUB-34-36 at 96.9 mg/kg (34.37-36.37 ft bfg)

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  - SSHS-B3570-SUB-32-34 at 104.2 mg/kg (32.19-34.19 ft bfg)
  - SSHS-B3570-SUB-34-35 at 245.6 mg/kg (34.19-36.19 ft bfg)
  - SSHS-B645A-SUB-34-36 at 513 mg/kg (34.41-36.41 ft bfg)
- 36-38 ft bfg at B3563A, B3570, B645, B3564
  - SSHS-B3563A-SUB-34-36 at 96.9 mg/kg (34.37-36.37 ft bfg)
  - SSHS-B3570-SUB-34-35 at 245.6 mg/kg (34.19-36.19 ft bfg)
  - SSHS-B645A-SUB-34-36 at 513 mg/kg (34.41-36.41 ft bfg)
  - SSHS-B3563A-SUB-36-37 at 833 mg/kg (36.37-37.37 ft bfg)
  - SSHS-B3564A-SUB-36-37 at 9,596 mg/kg (36.2-37.2 ft bfg)

Potential to Exhibit the Characteristic of Metal Toxicity Hazardous Metals

Metal concentrations with the potential to exhibit the characteristic of toxicity are present in the FFC area from 2-4, 6-10, and 14-16 ft bfg (**Tables 6-2B**, **6-3B,** and **6-4B**). The limits are horizontally defined for the FFC area from 2-4, 6-10, and 14-16 ft bfg as depicted on **Figure 6-4B-H.** The samples that define the lateral and vertical delineation of metal concentrations with the potential to exhibit the characteristic of toxicity are provided on **Appendix S.** Exceedances at the Revised BCP Site Boundary are off-Site and will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2. Metals exceedances are present at the following samples and depths:

- 2-4 ft bfg at ISMP-ES-B5 and IRM5A3-S4.
  - Lead at 1,300 mg/kg at ISMP-ES-B5 (2.56 ft bfg) (screening value of 1,000 mg/kg)
  - Chromium at 1,300 mg/kg at IRM5A3-S4 (2-4 ft bfg) (screening value of 100 mg/kg)
- 6-8 ft bfg at IRM5-P18-3W, B2233, and B2026.
  - Arsenic at 110 mg/kg at IRM5-P18-3W (6.17 ft bfg) (screening value of 100 mg/kg)
  - Lead at 1,200 mg/kg at B2233 (6.52-8.52 ft bfg) (screening value of 1,000 mg/kg)
  - Mercury at 14 mg/kg at B2026 (6.21 ft bfg) (screening value of 4 mg/kg)
- 8-10 ft bfg at, B2226, B2233, and IRM5-DW3WEST
  - Chromium at 340 mg/kg at B2226 (8-10 ft bfg) (screening value of 100 mg/kg)
  - Lead at 1,100 mg/kg at B2226 (8-10 ft bfg) (screening value of 1,000 mg/kg)
  - Lead at 3,800 mg/kg at IRM5-DW3WEST (8.75 ft bfg) (screening value of 1,000 mg/kg)
- 14-16 ft bfg at IRM5-P187 BOT 8 and IRM5-P187 BOT 9
  - Chromium at 2,200 mg/kg at IRM5-P187 BOT 8 (15.53 ft bfg) (screening value of 100 mg/kg)
  - Chromium at 760 mg/kg at IRM5-P187 BOT 9 (15.12 ft bfg) (screening value of 100 mg/kg)

Lead remains at residual concentration of 3,800 mg/kg at a depth of 8.74 ft bfg below the soil cover at IRM5-DW3West at a concentration in the southeastern portion of the FFC **(Figure 6-4E** and **Table 6-3B**). A completion package to support a request to backfill was submitted to NYSDEC on 24 June 2021. NYSDEC provided conditional approval to backfill on 28 June 2021 with a

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request for ECSD concurrence which was provided on 30 June 2021. The residual lead concentration will be managed under the ISMP and future SMP.

Chromium remains in place at residual concentrations of 2,200 mg/kg and 760 mg/kg at SSHS-IRM5-P187 BOT 8 and SSHS-IRM5-P187 BOT 9, respectively, at depths between 15.11-15.52 ft bfg **(Figure 6-4H** and **Table 6-3B**). Those samples were left in place due to technical impracticability of excavating soils near or at the water table. A completion package to support a request to backfill was submitted to NYSDEC on 27 May 2021 and NYSDEC provided authorization to backfill on 28 May 2021. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP.

Protection of Groundwater

As discussed in Section 6.2, PCBs are detected in groundwater above TOGS standards at the former slide rail area. PCBs remaining in soil at depths below the water table at concentrations above the PoG SCO have been delineated by RI soil borings advanced to a silty clay aquitard that is the lower bound of the water-bearing zone. Exceedances are limited to the former slide rail area and the southwestern portion of the FFC. PCB concentrations above the PoG SCO and below TSCA levels range from 3.21 to 45.3 mg/kg. PCB concentrations remaining in place above TSCA level range from 62.8 to 19,240 mg/kg. These samples remain in place due to the technical impracticability of excavating soils at and below the water table. Residual PCBs may continue to impact groundwater quality; therefore, a groundwater monitoring program will be included in the SMP

Exceedances of PoG SCOs for metals, SVOCs, and VOCs, and in subsurface and deep soils presented in **Tables 6-3B-6-4D** were evaluated based on groundwater quality data and found to not be impacting groundwater above TOGS groundwater standards.

Diesel Fuel

Detections of diesel fuel in soil at the water table remain in place above the nuisance criteria of 1,000 mg/kg in the northeast portion of the FFC. The nuisance criteria for TPH diesel range organics was referenced in the Soil and Groundwater Investigation Work Plan EHS Building Area (Geosyntec, 2024a). The diesel fuel detections were identified following excavation to the water table in June 2021 to address observations of petroleum odors and staining as well as elevated PID readings. A sheen was observed in water at the base of the excavation. NYSDEC authorized the backfilling of the excavation on 22 June 2021 with the understanding that SVOC impacts in soil and groundwater, related to AOC-9 and AOC-11, respectively, would be managed under the final remedy (Geosyntec, 2026d). As noted above, exceedances of PoG SCOs for SVOCs have not been associated with exceedances of TOGS groundwater standards.

6.3.3 Main Parking Lot and Tennis Courts

Soil conditions remaining in place within the Main Parking Lot and Tennis Courts area were evaluated for PCBs, metals, SVOCs, VOCs, and emerging contaminants relative to the Restricted Residential SCOs and applicable guidance values. Based on post-IRM conditions, residual COCs

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for PCBs, metals, and SVOCs remain in place in limited areas. Remaining exceedances are delineated within the Revised BCP Site Boundary, identified in areas adjacent to but outside the Revised BCP Site Boundary, or inferred to extend to the Site boundary. These areas will be further evaluated as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Residual exceedances within the upper 2 ft are limited, and where present on-Site, are to be managed under the site management controls, including the ISMP and future SMP.

A detailed summary demonstrating investigation of AOCs, including data collection, potential source areas, and impacted media was previously presented for each AOC within the Main Parking Lot and Tennis Courts area in Section 5. AOCs identified in the Main Parking Lot and Tennis Courts area including AOC-2D (Manhole SW-73 Near Building 28A), AOC-3 (1979 Storm Sewer), AOC-11 (VOC- and Petroleum Impacted Groundwater), AOC-13 (Metals Cleaning, Vapor Degreaser, and Solvent Still), AOC-14 (Power Washer, Rust Prevention Dip Operation), AOC-16 (Machine Shop Area), and AOC-17 (Possible Disposal Areas). Restricted Residential SCO exceedances are generally associated with historical fill materials. The provided Restricted Residential SCO limits for the Main Parking Lot and Tennis Courts area demonstrates delineation of the nature and extent of these AOCs.

The Main Parking Lot and Tennis Courts areas were investigated as part of the SC. Addenda to the SC Work Plan (Geosyntec, 2015b, 2016a, 2016b, 2017a and 2017b) focused on delineation of PCBs in soils as the driver for remedial activity to be conducted in coordination with planned capital improvements in the Main Parking Lot and Tennis Courts to be conducted by ECSD in 2017. Primary samples were collected in the Tennis Courts area to depths of 4 ft bgs based on previous detections and additional samples were collected at depths up to 8 ft bgs and held for analysis pending the results of the primary samples. Based on the results of the primary samples, samples collected at depths up to 6 ft bgs were released for analysis to provide vertical delineation.

Soil data for PCBs collected during the SC were used to pre-delineate the IRM #1 excavations (Geosyntec, 2017d). Post-excavation confirmation samples were only required in areas beyond the IRM #1 design (Geosyntec, 2019f). No additional investigation was conducted beneath the EHS Tennis Courts following the completion of IRM #1 and ECSD capital improvements in 2017 to avoid disturbance of the newly constructed tennis courts. Portions of the tennis courts are underlain by two feet of imported fill as part of the IRM #1 soil cover (Geosyntec, 2019f). This area is to be managed under the ISMP and future SMP.

Subsequent RI activities focused on the areas to the west of the Tennis Courts with soil investigation to 22 ft bfg and installation of monitoring wells MW-77S and MW-77I.

As the primary samples collected in the Tennis Court area were collected to 4 ft bgs and limited data collected past this depth, the extent of the Restricted Residential SCO limit below the Tennis Courts area deeper than 4 ft bfg is shown as inferred to 16 ft bfg on **Figures 6-5C-H**. Restricted Residential SCO exceedances remaining in the Main Parking Lot and Tennis Courts area are horizontally delineated or inferred to the Site boundary. SCOs inferred to the BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. With the exception of the sample locations outlined below, the Restricted Residential

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SCO exceedances present within the Main Parking Lot and Tennis Courts area have been delineated vertically.

As shown on **Figures 6-5A-C**, Restricted Residential SCO exceedances remaining in place generally form a laterally continuous zone extending across the Main Parking Lot and Tennis Courts area from 0-6 ft bfg. From 6-16 ft bfg, Restricted Residential SCO exceedances are limited to the southeast corner of this area (**Figures 6-5D-H**). The lateral limits of these Restricted Residential SCO exceedances are either defined by soil borings and IRM samples remaining in place below Restricted Residential SCOs or extend to the Revised BCP Site Boundary where limits are inferred. For areas where samples remaining in place are below Restricted Residential SCOs, the extent is considered defined. Where Restricted Residential SCO exceedances are not defined within the Revised BCP Site boundary, the limit is depicted up to the boundary and shown as inferred. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Given the widespread occurrence of Restricted Residential SCO exceedances across the Main Parking Lot and Tennis Courts Area, the depicted lateral extent is intended to be conservative and provide a limit for the multiple Site COCs (i.e. PCBs, metals, SVOCs, VOCs, and emerging contaminants). Accordingly, the mapped limits may include areas excavated as part of an IRM and encompass portions of multiple AOCs where exceedances are laterally contiguous. Vertically, Restricted Residential SCO exceedances in the Main parking Lot and Tennis Courts Area are limited to 16 ft bfg. IRM activities have removed a substantial portion of exceedances above the water table. Remaining impacts are limited in areal extent and depth and do not represent a significant ongoing source following remediation. Restricted Residential SCO exceedances are adequately delineated to support RI objectives, including decision-making regarding remedial actions for the Revised BCP Site, identification of COC sources and migration pathways, evaluation of actual or potential receptors, and completion of a qualitative human health risk assessment. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP.

A summary of these defining samples or inferred limits is provided by depth bfg for the Main Parking Lot and Tennis Court area in **Appendix S**. Limits are presented for the Site cardinal directions for each depth (i.e. north, east, south, and west). Site Cardinal directions are relative to "Site north" orientation which designates the EHS Building as north, the NSRC railroad property as east, the STCC property as south, and Main Street as west. Limits that are inferred up to the Revised BCP Site boundary are noted with rationale provided where applicable. Each depth interval is also evaluated to present samples which define the vertical extent of exceedances.

Above the Water Table

The nature and extent of COCs remaining in place to 4 ft bfg at the Tennis Courts and to 16 ft bfg at the Main Parking Lot are presented in two-foot intervals in ft bfg on **Figures 6-5A-H**. As discussed in Section 3.2.1, IRM #1 was conducted between June and September 2017 for removal of PCB-impacted soils at the Main Parking Lot (South Excavation) and EHS Tennis Courts (North Excavation). IRM construction in the South Excavation was limited to 4 ft bgs in the Main Parking Lot and to 2 ft bgs in areas to the east to accommodate the schedule for ECSD capital

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improvements. IRM #3 was conducted between June and October 2019 to continue soil removal in the IRM #1 South Excavation.

PCBs

PCBs remain in place at concentrations above the Restricted Residential SCO (1 mg/kg) at depths from 0-16 ft bfg, within or below the soil cover system (**Table 6-2A** and **6-3A**). The maximum concentration of PCBs above Restricted Residential SCO in place above the water table is 14.2 mg/kg 12-14 ft bfg at SSHS-B2755. PCBs are horizontally defined for the Main Parking Lot and Tennis Courts area from 0-14 ft bfg by the Restricted Residential SCO Limits depicted on **Figures 6-5A-G**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Main Parking Lot and Tennis Courts area in **Appendix S.** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. There are no total PCB concentrations at or above the TSCA level of 50 mg/kg remaining in place from 0-16 ft bfg in the Main Parking Lot and Tennis Courts area. From 0-2 ft bfg, exceedances of Restricted Residential SCOs remain in place below the soil cover system at the following location:

- PS-FD-14 (1.07 mg/kg) at 0-2 ft bfg. The parent sample, SSHS-B759-SUB-0-2, had detection of total PCBs of 0.45 mg/kg (**Table 6-2A**). This sample is located beneath the hardscape cover of the Tennis Courts.

SSHS-B2754-SUB-14-16 (2.73 mg/kg) from 14-16 ft bfg is not vertically delineated for PCBs above the Restricted Residential SCO. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP.

Metals

Metals including arsenic, barium, cadmium, chromium, copper, lead, and nickel remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2B** and **6-3B**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of metals above Restricted Residential SCOs left in place were at 13.28 ft bfg at SSHS-IRM3-PIPE22-C are as follows:

- Arsenic (16 mg/kg) – 130 mg/kg
- Barium (400 mg/kg) – 740 mg/kg
- Cadmium (4.3 mg/kg) – 5.1 mg/kg
- Chromium (110 mg/kg) – 180 mg/kg
- Copper (270 mg/kg) – 2,600 mg/kg
- Lead (400 mg/kg) – 4,600 mg/kg
- Nickel (310 mg/kg) – 1,400 mg/kg

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Metals remain in place above the Restricted Residential SCOs from 0-2 ft bfg in the Main Parking Lot. SSHS-IRM3-PIPE20 from 0-2 ft bfg (**Figure 6-5A**) had a detection of arsenic at 47 mg/kg, chromium at 170 mg/kg, copper at 840 mg/kg, and lead at 630 mg/kg, above Restricted Residential SCOs (**Table 6-2B)**. Metals are horizontally defined for the Main Parking Lot and Tennis Courts area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-5A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Main Parking Lot and Tennis Courts area in **Appendix S** Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2. Pipe 20 and Pipe 22 were left in place to allow backfilling and restoration of the IRM #3 excavation prior to the 2019-20 school year. Restricted Residential SCO exceedances remaining from 0-2 ft bfg are delineated (**Figure 6-5A**) and will be managed under the SMP for #c808022.

SVOCs

SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft bfg, below the soil cover system (**Tables 6-2C** and **6-3C**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of SVOCS above Restricted Residential SCOs left in place were at 12.91 ft bfg at SSHS-IRM3-OS1. The concentrations are as follows:

- benz(a)anthracene (1 mg/kg) – 12 mg/kg
- benzo(a)pyrene (1 mg/kg) – 8.6 mg/kg
- benzo(b)fluoranthene (1 mg/kg) – 11 mg/kg
- benzo(k)fluoranthene (3.9 mg/kg) – 4.1 mg/kg
- chrysene (3.9 mg/kg) – 11 mg/kg
- dibenz(a,h)anthracene (0.33 mg/kg) – 1.3 mg/kg
- indeno(1,2,3-cd)pyrene (0.5 mg/kg) – 5.8 mg/kg

SVOCs remain in place above the Restricted Residential SCOs from 0-2 ft bfg in the Main Parking Lot area. Shallow subsurface soil samples, SSHS-B78, SSHS-B81, SSHS-B84, and B4168 (**Figure 6-5A**) had detections of SVOCs (**Table 6-2A**) above Restricted Residential SCOs in samples collected from 0.17-2 ft bfg. These samples are located under the asphalt student parking lot. SVOCs were detected above Restricted Residential SCOs at IRM3-PIPE20. This sample was left in place to allow backfilling and restoration of the IRM #3 excavation prior to the 2019-20 school year. This sample is located under the asphalt student parking lot.

Restricted Residential SCO exceedances remaining from 0-2 ft are delineated by samples remaining in place or IRM excavation limits (**Figure 6-5A**). SVOCs are horizontally defined for the Main Parking Lot and Tennis Courts area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-5A-H**. Restricted Residential SCO exceedances remaining in place beneath the cover system will be managed under the ISMP and future SMP. Limits inferred to the Revised

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BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. Exceedances of Restricted Residential SCOs in the shallow subsurface are attributed to the overlying asphalt pavement.

VOCs

No VOCs remain in place at concentrations above Restricted Residential SCOs in the Main Parking Lot and Tennis Courts area.

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-2E** and **6-3E**. 1,4-dioxane was not detected above its Restricted Residential SCOs in the Main Parking Lot and Tennis Courts area. PFOA and PFOS were not detected above the Restricted Residential Guidance Values in the Main Parking Lot and Tennis Courts area.

Below Water Table

The nature and extent of COCs below the water table (approximately 16 ft bgs) at the Main Parking Lot and Tennis Courts area are presented in 2-foot intervals on **Figures 6-5I-J**. PCBs, Metals, SVOCs and VOCs were not detected above Restricted Residential SCOs below the water table in the Main Parking Lot and Tennis Courts area.

PCBs

No PCBs were detected above the Restricted Residential SCO for the Main Parking Lot and Tennis Courts area (**Table 6-4A**).

Metals

No metals were detected above the Restricted Residential SCOs for the Main Parking Lot and Tennis Courts area (**Tables 6-4B**).

SVOCs

No SVOCs were detected above the Restricted Residential SCOs for the Main Parking Lot and Tennis Courts area (**Tables 6-4C**).

VOCs

No VOCs were detected above the Restricted Residential SCOs for the Main Parking Lot and Tennis Courts area (**Tables 6-4D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-4E**. 1,4-dioxane was not detected above its Restricted Residential SCOs in the Main Parking Lot and Tennis Courts Area. PFOA and PFOS

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were not detected above the Restricted Residential Guidance Values in the Main Parking Lot and Tennis Courts area.

Residual Contamination

TSCA Level PCBs

No PCB concentrations at or above TSCA levels of 50 mg/kg remain in the Main Parking Lot and Tennis Courts area (**Tables 6-2A**, **6-3A,** and **6-4A**).

Potential to Exhibit the Characteristic of Metal Toxicity

Metal concentrations that have the potential to exhibit the characteristic of toxicity remain in the Main Parking Lot and Tennis Courts area from 0-2 and 12-14 ft bfg (**Tables 6-2B**, **6-3B,** and **6-4B**). The limits are horizontally defined for the Main Parking Lot and Tennis Courts area from 0-2 and 12-14 ft bfg depicted on **Figures 6-5A** and **6-5G**. Exceedances at the Revised BCP Site Boundary are off-Site and will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. Metals exceedances are present at the following samples and depths:

- 0-2 ft bfg at IRM3-PIPE20. This sample was left in place to allow backfilling and restoration of the IRM #3 excavation prior to the 2019-20 school year.
    - Chromium (III+VI) at 170 mg/kg (0.58 ft bfg) (screening value of 100 mg/kg)
- 12-14 ft bfg at IRM3-PIPE22. This sample was left in place to allow backfilling and restoration of the IRM #3 excavation prior to the 2019-20 school year.
    - Arsenic at 130 mg/kg (13.28 ft bfg) (screening value of 100 mg/kg)
    - Chromium (III+VI) at 180 mg/kg (13.28 ft bfg) (screening value of 100 mg/kg)
    - Lead at 4,600 mg/kg (13.28 ft bfg) (screening value of 1,000 mg/kg)

Metal concentrations with the potential to exhibit the characteristic will be managed under the ISMP and future SMP.

Protection of Groundwater

Exceedances of PoG SCOs for PCBs, metals, SVOCs, and VOCs in subsurface and deep soils presented in **Tables 6-3A** through **6-4D** are evaluated based on groundwater quality data and found to not be impacting groundwater above TOGS groundwater standards in the Main Parking Lot and Tennis Courts area.

6.3.4 Rear Parking Lot

Soil conditions remaining in place within the Rear Parking Lot area were evaluated for PCBs, metals, SVOCs, VOCs, and emerging contaminants relative to the Restricted Residential SCOs and applicable guidance values. Based on post-IRM conditions, residual concentrations of PCBs, metals and SVOCs remain in place in limited areas. Remaining exceedances are delineated within the Revised BCP Site Boundary or inferred to extend up to the Revised BCP Site boundary. These areas will be further evaluated as part of the RI for the Former Sperry Remington Site – North

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Portion 2 Site #c808054. Restricted Residential SCO exceedances remaining within the Revised BCP Site Boundary will be managed under the ISMP and future SMP.

Due to topographic relief across the Southern Portion of the Site and surface elevation changes following completion of IRM #2 and ECSD capital improvements to the Rear Parking Lot in 2018, nature and extent data for the Southern Portion of the Site, including the Rear Parking Lot area, were previously depicted based on elevation in lieu of depth below ground surface as presented in the Third Revision – Addendum #2 to the Soil and Groundwater Investigation Work Plan – EHS Building Area (Southern Portion) Interim Data Report (Geosyntec, 2026e). Data depiction on an elevation basis provides a comprehensive summary of where in-situ data remains based on current elevation and allows for accurate lateral delineation assessment of subsurface soils at locations with varying surface elevations. For consistency in the RI/AA report, samples remaining in place for the Rear Parking Lot are presented based on depth bfg. The vertical and lateral delineation evaluation for the Southern Portion of the Site and Rear Parking Lot, as presented in the Interim Data Report, demonstrated that COPCs had been sufficiently delineated to support evaluation of potentially complete exposure pathways and remedial decision-making for on-Site conditions. The Interim Data Report and the associated elevation-based data presentations are included in **Appendix R**.

A detailed summary demonstrating investigation of AOCs, including discussion of data collection, potential source areas, and impacted media was previously presented for each AOC within the Rear Parking Lot in Section 5. AOCs in the Rear Parking Lot include AOC-17 (Possible Disposal Areas) and AOC-3 (1979 Storm Sewer). Restricted Residential SCO exceedances are widespread across the Rear Parking Lot and are generally associated with historical fill materials. The provided Restricted Residential SCO limits for the Rear Parking Lot area demonstrate delineation of the nature and extent of this AOC for portions within the Revised BCP Site.

Residual contamination that remains in place within IRM #2 is either below concrete obstructions and utilities or the result of construction modifications (i.e., additional sloping and benching) due to the obstructions. Demarcation layers consisting of geotextile fabric and orange netting were placed at the base of excavations where excavation to design limits could not be completed prior to backfilling. Restricted Residential SCO exceedances remaining in the Rear Parking Lot area are horizontally delineated or inferred up to the Revised BCP Site boundary. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. COCs above Restricted Residential SCOs present within the Rear Parking Lot area have been delineated vertically.

As shown on **Figures 6-6A-H**, Restricted Residential SCO exceedances remaining in place generally form a laterally continuous zone extending across the Rear Parking Lot. The lateral limits of these Restricted Residential SCO exceedances are either defined by soil borings and IRM samples remaining in place below Restricted Residential SCOs or extend to the Revised BCP Site Boundary where limits are inferred. For areas where samples remaining in place are below Restricted Residential SCOs, the extent is considered defined. Where Restricted Residential SCO exceedances are not defined within the Revised BCP Site boundary, the limit is depicted up to the

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boundary and shown as inferred. In areas where the limits are inferred at the Revised BCP Site boundary, further evaluation will be conducted as part of the RI for the Former Sperry Remington Site – North Portion 2 Site #c808054. Given the widespread occurrence of Restricted Residential SCO exceedances across the Rear Parking Lot, the depicted lateral extent is intended to be conservative and provide a limit for the multiple Site COCs (i.e. PCBs, metals, SVOCs, VOCs, and emerging contaminants). Accordingly, the mapped limits may include areas excavated as part of an IRM and encompass portions where exceedances are laterally contiguous. Vertically, Restricted Residential SCO exceedances in the Rear Parking Lot are limited to 18 ft bfg. IRM activities have removed a substantial portion of shallow exceedances. The Rear Parking Lot area was excavated from 0-2 ft as shown by the IRM 2 Final Limits of Excavation depicted on **Figure 6-6A**. PCBs exceeded the Restricted Residential SCO at SSHS-B854-SUB-2-4. SSHS-B854-SUB-2-4 remains in place from 1.93-3.93 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.07 ft, the current sample depth below final grade is 1.93-3.93 ft. This sample is located under the asphalt parking lot. PCBs and metals exceeded the Restricted Residential SCO at SSHS-B3824-SUB-0.17-2. This sample is located on the Revised BCP boundary and will be addressed as part of the #c808054 RI.

Remaining impacts are limited in areal extent and depth and do not represent a significant ongoing source following remediation. Restricted Residential SCO exceedances are adequately delineated to support RI objectives, including decision-making regarding remedial actions for the Revised BCP Site, identification of COC sources and migration pathways, evaluation of actual or potential receptors, and completion of a qualitative human health risk assessment. Restricted Residential SCO exceedances remaining beneath the cover system will be managed under the ISMP and future SMP.

A summary of these defining samples or inferred limits is provided by depth bfg for the Rear Parking Lot in **Appendix S**. Limits are presented in the Site cardinal directions for each depth (i.e. north, east, south, and west). Site Cardinal directions are relative to "Site north" orientation which designates the EHS Building as north, the NSRC railroad property as east, the STCC property as south, and Main Street as west. Limits that are inferred up to the Revised BCP Site boundary are noted with rationale provided where applicable.

Above the Water Table

The nature and extent of COCs remaining in place to 16 ft bfg at the Rear Parking Lot are presented in 2-foot intervals in ft bfg on **Figures 6-6A-H**. As discussed in Section 3.2.2, IRM #2 was conducted between June and October 2018 for removal of PCB and metal impacts in soils in the EHS Rear Parking Lot. Excavation was limited due to historical concrete foundations that were encountered as documented in the IRM #2 CCR (Geosyntec, 2019g). Subsurface obstructions encountered during construction included monolithic objects such as concrete piers, blocks, building walls, and foundation slabs (**Appendix N**). It was determined that removal of the estimated 553 cubic yards of slab material and 240 cubic yards of concrete wall and pier material was infeasible for removal. Subsequently, an estimated 5,666 of 6,009 cubic yards (94%) of

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hazardous waste and 6,501 out of 7,929 cubic yards (82%) of non-hazardous waste were removed during IRM #2 (12,167 out of 13,938 cubic yards in total, or 87% removal). Due to these subsurface obstructions, sheet piling walls could not be installed adjacent to the EHS building and the utility corridor for the electrical and natural gas lines for safe soil removal. Confirmation samples were collected along the sidewall of sloped excavations, as well as on top of and adjacent to concrete structures left in place. The samples were analyzed for PCBs and metals as documented in the IRM #2 CCR (Geosyntec, 2019f).

PCBs

PCBs remain in place at concentrations above the Restricted Residential SCO (1 mg/kg) at depths from 0-16 ft bfg (**Table 6-2A** and **6-3A**). The maximum concentration of PCBs above the Restricted Residential SCO above the water table is 258.2 mg/kg 3.75 ft bfg at SSHS-E-S-1-1. PCBs are horizontally defined for the Rear Parking Lot area from 0-16 ft bfg by the Restricted Residential SCO depicted on **Figures 6-6A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Rear Parking Lot in **Appendix S**. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. There are PCB concentrations at or above the TSCA level of 50 mg/kg remaining in place from 2-14 ft bfg in the Rear Parking Lot area. These TSCA level PCB concentrations remain in place throughout the IRM #2 area due to concrete obstructions, utilities, or as result of construction modifications (i.e., additional sloping and benching) due to the obstructions (**Appendix N**). TSCA level PCB concentrations are discussed further below. From 0-2 ft bfg, exceedances of the Restricted Residential SCO remain in place at the following locations:

- B854 (8.12 mg/kg) 1.93-3.93 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.07 ft, the current sample depth below final grade is 1.93-3.93 ft. This sample is located under the asphalt parking lot.
- B3824 (5.58 mg/kg) 0.17-2 ft bfg. This sample is located on the Revised BCP boundary and will be addressed as part of the #c808054 RI.
- B133 (2.7 mg/kg) 1.94-3.94 ft bfg. This sample was originally collected from 2-4 ft bgs at the time of collection. As the final grade elevation is lower than the surface elevation at the time of sampling by 0.06 ft, the current sample depth below final grade is 1.94-3.94 ft. This sample is located on the Revised BCP boundary and will be addressed as part of the #c808054 RI.

Restricted Residential SCO exceedances remaining from 0-2 ft bfg (**Figure 6-6A**) will be managed under the ISMP and future SMP.

Metals

Metals including arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, and nickel remain in place at concentrations above Restricted Residential SCOs at depths from 0-16 ft

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bfg, below the soil cover system (**Tables 6-2B** and **6-3B**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of metals above Restricted Residential SCOs left in place are as follows:

- Arsenic (16 mg/kg) – 79 mg/kg 6.08-8.08 ft bfg at SSHS-SS-05_8_20
- Barium (400 mg/kg) – 1,500 mg/kg 1.8-3.8 ft bfg at SSHS-B520-SUB-2-4
- Cadmium (4.3 mg/kg) – 48 mg/kg 3.8-5.8 ft bfg at SSHS-B520-SUB-4-6
- Chromium (III + VI) (110 mg/kg) – 170 mg/kg 9.66-11.66 ft bfg at SSHS-BSW-001
- Copper (270 mg/kg) – 340 mg/kg 11.74 ft bfg at EBSW-10-12
- Lead (400 mg/kg) – 2,100 mg/kg 9.88-11.88 ft bfg at SSHS-B542-SUB-10-12
- Manganese (2,000 mg/kg) – 2,900 mg/kg 6.81-8.81 ft bfg at SSHS-SPA4-B5527-ELEV-846-844
- Mercury (0.81 mg/kg) – 6.6 mg/kg 8 ft bfg at CS-05-19
- Nickel (310 mg/kg) – 2,000 mg/kg 9.66-11.66 ft bfg at EBSW-10-12 and 10.01-12.01 ft bfg at SSHS-B1299-SUB-10-12

Metals are horizontally defined for the Rear Parking Lot area from 0-16 ft bfg by the Restricted Residential SCOs depicted on **Figures 6-6A-H**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Rear Parking Lot in **Appendix S**. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

SVOCs

SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene remain in place at concentrations above Restricted Residential SCOs at depths from 8-10 ft bfg, below the soil cover system (**Tables 6-2C** and **6-3C**). Restricted Residential SCOs are presented in parentheses below. The maximum concentrations of SVOCs above Restricted Residential SCOs left in place were detected at 9.1 ft bfg at SSHS-CS2. The concentrations of SVOCs at SSHS-CS2 are as follows:

- benz(a)anthracene (1 mg/kg) – 1.6 mg/kg
- benzo(a)pyrene (1 mg/kg) – 1.1 mg/kg
- benzo(b)fluoranthene (1 mg/kg) – 1.9 mg/kg
- indeno(1,2,3-cd)pyrene (0.5 mg/kg) – 1.2 mg/kg

SVOCs are horizontally defined for the Rear Parking Lot from 8-10 ft bfg by the Restricted Residential SCO limits depicted on **Figures 6-6E**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Rear Parking Lot in **Appendix S**. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP. Limits inferred to

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the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054.

VOCs

VOCs do not remain in place above the Restricted Residential SCOs for the Rear Parking Lot Area (**Tables 6-2D** and **6-3D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-2E** and **6-3E**. 1,4-dioxane was not detected above its Restricted Residential SCO in the Rear Parking Lot area. PFOS and PFOA were not detected above the Restricted Residential Guidance Values in the Rear Parking Lot area.

Below Water Table

The nature and extent of COCs below the water table (approximately 16 ft bgs) at the Rear Parking Lot area are presented in 2-foot intervals on **Figures 6-6I-J**. RI investigations of soil below the water table identified concentrations of PCBs above the NYSDEC Restricted Residential SCO from 16-18 ft bfg at the Rear Parking Lot area. Metals, SVOCs, and VOCs were not detected above Restricted Residential SCOs below the water table at the Rear Parking Lot area. Restricted Residential SCO PCB exceedances remaining in the Rear Parking Lot are vertically delineated. These samples remain in place due to the technical impracticability of excavating soils at and below the water table.

PCBs

PCBs were detected above the Restricted Residential SCO (1 mg/kg) from 14-18 ft bfg, below the soil cover system (**Table 6-4A**). PCBs were detected at 33.2 mg/kg from 14.07-16.07 ft bfg at SSHS-B1026-SUB-14-16. This sample remains in place due to the technical impracticability of excavating soils at and below the water table. PCBs are horizontally defined for the Rear Parking Lot area below the water table by the Restricted Residential SCO depicted on **Figure 6-6I**. A summary of samples that define the Restricted Residential SCO limits or locations where the limits are inferred up to the Revised BCP Site Boundary is provided by depth bfg for the Rear Parking Lot in **Appendix S**. Residual PCBs may affect groundwater quality; therefore, a groundwater monitoring program will be included in the SMP. PCBs have not been detected above TOGS groundwater standards in the Rear Parking Lot area.

Metals

Metals were not detected above the Restricted Residential SCOs for the Rear Parking Lot area (**Tables 6-4B**).

SVOCs

SVOCs were not detected above the Restricted Residential SCOs for the Rear Parking Lot area (**Tables 6-4C**).

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VOCs

VOCs were not detected above the Restricted Residential SCOs for the Rear Parking Lot area (**Tables 6-4D**).

Emerging Contaminants

Emerging contaminants results are presented in **Table 6-4E**. 1,4-dioxane was not detected above its Restricted Residential SCOs in the Rear Parking Lot area. PFOS and PFOA were not detected above the Restricted Residential Guidance Values in the Rear Parking Lot area.

Residual Contamination

TSCA Level PCBs

Total PCB concentrations at or above TSCA levels of 50 mg/kg are present from 2-14 ft bfg in the Rear Parking Lot area (**Tables 6-3A**). These concentrations range from 52 to 258.2 mg/kg. The limits of TSCA level PCBs are horizontally defined for the Rear Parking Lot area from 2-14 ft below final grade by the TSCA limits depicted on **Figures 6-6B-G**. The samples that define the lateral and vertical delineation of these TSCA exceedances are provided on **Appendix S**. These TSCA level PCB concentrations remain in place throughout the IRM #2 area due to concrete obstructions, utilities, or as a result of construction modifications (i.e., additional sloping and benching) due to the obstructions (**Appendix N**). TSCA limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. TSCA level PCB concentrations are present at the following samples and depths:

- 2-4 ft bfg at E-S-1-1 and SW-018
  - SSHS-E-S-1-1 at 258.2 mg/kg (3.75 ft bfg)
  - SSHS-SW-018 at 54.5 mg/kg (3.94 ft bfg)
- 4-6 ft bfg at B159 and B552
  - SSHS-B159 at 61.4 mg/kg (4.01-6.01 ft bfg)
  - SSHS-B552 at 68.8 mg/kg (4.16-6.16 ft bfg)
- 6-8 ft bfg at B1257, B159, and B552
  - SSHS-B1257 at 63.3 mg/kg (6.60-8.60 ft bfg)
  - SSHS-B159 at 61.4 mg/kg (4.01-6.01 ft bfg)
  - SSHS-B552 at 68.8 mg/kg (4.16-6.16 ft bfg)
- 8-10 ft bfg at B1257, P2, B883, and B992
  - SSHS-B1257 at 63.3 mg/kg (6.60-8.60 ft bfg)
  - SSHS-P2 at 106.3 mg/kg (8.46 ft bfg)
  - SSHS-B883 at 95.39 mg/kg (8.04-10.04 ft bfg)
  - SSHS-B992 at 59.1 mg/kg (8.58-10.58 ft bfg)
- 10-12 ft bfg at B992, B883, B890, B839
  - SSHS-B992 at 59.1 mg/kg (8.58-10.58 ft bfg)
  - SSHS-B883 at 95.39 mg/kg (8.04-10.04 ft bfg)
  - SSHS-B883 at 62.5 mg/kg (10.14-12.14 ft bfg)

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  - SSHS-B890 at 116.4 mg/kg (10.36-12.36 ft bfg)
  - SSHS-B839 at 52 mg/kg (10.27-12.27 ft bfg)
- 12-14 ft bfg at B883, B839 and B890
  - SSHS-B883 at 62.5 mg/kg (10.14-12.14 ft bfg)
  - SSHS-B839 at 52 mg/kg (10.27-12.27 ft bfg)
  - SSHS-B890 at 116.4 mg/kg (10.36-12.36 ft bfg)

Potential to Exhibit the Characteristic of Metal Toxicity

Metal concentrations with the potential to exhibit the characteristic of toxicity are present in the Rear Parking Lot area from 8-12 ft bfg (**Tables 6-2B**, **6-3B,** and **6-4B**). The limits are horizontally defined for the Rear Parking Lot area from 8-12 ft below final grade as depicted on **Figures 6-6E-F**. The samples that define the lateral and vertical delineation of metal concentrations with the potential to exhibit the characteristic of toxicity are provided on **Appendix S**. These exceedances remain in place throughout the IRM #2 area due to concrete obstructions, utilities, or as result of construction modifications (i.e., additional sloping and benching) due to the obstructions (**Appendix N**).

- 8-10 ft bfg at CS-05-19 and B542
  - Mercury at 6.6 mg/kg (screening value of 4 mg/kg) at CS-05-19 (8 ft bfg)
  - Lead at 2,100 mg/kg (screening value of 1,000 mg/kg) at B542 (9.88-11.88 ft bfg)
- 10-12 ft bfg at B542
  - Lead at 2,100 mg/kg (screening value of 1,000 mg/kg) at B542 (9.88-11.88 ft bfg)

Protection of Groundwater

As discussed in Section 6.2, COCs were not consistently detected above TOGS in the Rear Parking Lot area. Exceedances of PoG SCOs for PCBs, metals, and SVOCs in subsurface and deep soils are presented in **Tables 6-3A** through **6-4C** and evaluated based on groundwater quality data and found to not be impacting groundwater above TOGS groundwater standards in the Rear Parking Lot area.

6.3.5 EHS Building

The nature and extent of COCs below the EHS building is unknown. Direct investigation of subsurface soil beneath the EHS Building was not completed due to the physical constraints which made drilling within the building impracticable and unsafe. Specifically, interior ceiling heights do not provide adequate vertical clearance for conventional drill-rig masts, while drill-rig exhaust, limited ventilation, and amplified noise within the enclosed building present additional operational and occupational-safety constraints. Consequently, the nature and extent of COPCs in soil beneath portions of the building footprint, including several historically identified AOCs, have not been directly characterized.

Two samples, B3S and B4S, were collected by CME associates from 0.5-2.9 ft bgs (CME Associates, Inc. 2007). Samples were collected from 0-2.9 ft bgs below the EHS building during the limited investigation by CME Associates in 2008 and Sterling in 2009, prior to the construction

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of K-Wing. Four composite samples were collected by Sterling from the following boring locations:

- Composite Sample 1: B-1, B-6, B-7 (associated sample IDs – B1SS, B6SS, and B7SS)
- Composite Sample 2: B-2, B-3, B-5 (associated sample IDs – B2SS, B3SS, and B5SS)
- Composite Sample 3: B-4, B-8, B-9 (associated sample IDs – B4SS, B8SS, and B9SS)
- Composite Sample 4: B-10, B-11 (associated sample IDs – B10SS and B11SS)

This data collected below the K-Wing is presented in 2-foot intervals from 0-4 ft bfg on **Figures 6-7A-B**. As the nature and extent of COCs below the EHS Building is unknown, the depicted Restricted Residential SCO limits are inferred as the EHS Building footprint.

PCB Aroclor 1248 was detected at all locations under the EHS building, with concentrations ranging from 3.5 to 87 mg/kg, above the Restricted Residential SCO for total PCBs of 1 mg/kg. Nickel was detected at Composite Sample 1 (SSHS-B6SS, SSHS-B7SS, and SSHS-B1SS) at a concentration of 453 mg/kg, above the Restricted Residential SCO of 310 mg/kg. Limited SVOCs and VOCs were analyzed in these samples and not detected above Restricted Residential SCOs. PCB concentrations at or above TSCA levels of 50 mg/kg were detected in the EHS building area at SSHS-B3S 2-2.9 ft bfg at a concentration of 87 mg/kg. The inferred TSCA limit under the EHS building area is depicted on **Figure 6-7B**.

COCs are inaccessible below the K-Wing foundation. AOCs within the footprint of the EHS building (see **Figure 1-4**) include AOC-1A (Contaminated Sub-Slab Vapor), AOC-1B (Indoor Air Quality), AOC-2E (Waste Pit near Building 44), AOC-4 (Earthen Waste Pits near EHS Gym and Pool), AOC-5 (Sludge Tanks/Beds/Brick Pits near Building 64), AOC-6 (Concrete Vaults), AOC-7 (Drywell Structures), AOC-9 (Oil Storage and Handling, Oil House, Waste Oil Storage, and Quench Oil Reservoir), AOC-10D (Contaminated Subsurface Soils), AOC-11 (VOC- and Petroleum Impacted Groundwater), AOC-12 (Plating, Heat Treatment, and Tumbling Areas), AOC-13 (Metals Cleaning, Vapor Degreaser, and Solvent Still), AOC-15 (Wire Pickling Area), AOC-16 (Machine Shop Area), and AOC-17 (Possible Disposal Areas). It was determined that the physical constraints of the EHS building made drilling operations necessary to conduct additional soil investigations beneath the building impractical and unsafe. The ceiling height did not provide the vertical clearance required for drill rig masts. Additionally, indoor air flow posed ventilation challenges with the drill rig exhaust, and the confined space amplified the sound level beyond the acceptable occupational safety threshold. As discussed in Section 9, the proposed Track 4 remedy will include institutional and ECs, including provisions for future subsurface investigation if and when the building or portions of the building are demolished or areas otherwise become accessible.

As the nature and extent of COCs in soil beneath the EHS building footprint was not defined during the RI due to access and technical limitations, the limit of Restricted Residential SCO exceedances is depicted as inferred within the EHS building footprint on **Figures 6-7A-B**. Limits inferred to the Revised BCP Site boundary will be addressed as part of the RI of the Former Sperry Remington Site – North Portion 2 Site #c808054. Restricted Residential SCO exceedances remaining will be managed under the ISMP and future SMP.

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7. FATE AND TRANSPORT

Soils remain in place at the Revised BCP Site with concentrations above Restricted Residential SCOs for certain COCs including PCBs, metals, and SVOCs. However, to the extent practicable, completed IRMs have removed soil containing COCs above Restricted Residential SCOs from 0-2 ft bgs and soil containing COCs above subsurface IRM action levels from below 2 ft bgs. Groundwater samples collected from the Revised BCP Site have exceeded TOGS groundwater standards for VOCs, PCBs, SVOCs, (as noted in Section 6.2.3, SVOC exceedances are transient and do not appear to be Site-related), PFOS/PFOA (as noted in Section 6.2.5, PFOS/PFOA in wells upgradient of the Site have concentrations greater than what are detected on site) and metals (as noted in Section 6.2.2, iron and manganese exceedances are not Site-related) in several wells. Accordingly, the RI data were incorporated with the physical characterization of the Site to evaluate the fate and transport of COCs in Site media. The mechanisms by which the COCs can migrate to other areas or media are briefly outlined below. In all instances, the potential pathways are evaluated in the context of post-IRM conditions.

7.1 Conceptual Site Model

The fate and transport of COCs is described by a conceptual site model that includes the following elements: i) potential sources of contamination, ii) types of contaminants and affected media, iii) release mechanisms and potential contaminant pathways and iv) actual and potential human and environmental receptors.

The historical industrial use of the Site was assessed to evaluate potential sources of contamination and develop the list of AOCs in **Table 1-1**. The types of contaminants associated with the historical industrial use of the Site and the AOCs include PCBs, metals, SVOCs, and VOCs. Affected media include soil, soil vapor, and groundwater. The distribution of COCs in environmental media is described in Section 6; in general, contamination includes select metals, SVOCs, VOCs, and PCBs in subsurface soil below two feet of clean cover, hardscape, or building, VOCs in soil vapor in certain areas beneath the building, and VOCs and PCBs in groundwater in localized limited areas. PCBs remain as residual contamination in subsurface soil above and below the water table in the NAF, Rear Parking Lot, and north of the EHS Building in the southern part of the FFC, this material being impracticable to remove. Potential soil sources and related groundwater impact in the vicinity and downgradient of soil source areas were assessed comprehensively in Section 6; results show VOC TOGS groundwater standard exceedances in three locations; 1) downgradient of AOC-19, 2) downgradient of the former area of VOC-impacted soils area in the FFC (now removed by FFC IRM excavation), and 3) the East of Gymnasium area located within the New BCP Site (#c808054) and PCB TOGS groundwater standard exceedances in three locations 1) the former slide rail area, 2) downgradient of AOC-19, and 3) the East of Gymnasium area located within the New BCP Site (#c808054). Exceedances of the PoG SCOs for metals and SVOCs in subsurface and deep soils, respectively, were evaluated based on groundwater quality data and determined to not have an impact on groundwater above TOGS groundwater standards. Release mechanisms for the COCs and resulting potential migration and exposure pathways, including a discussion of persistence in the environment, are described in the following subsections. Actual

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and potential human and environmental receptors are discussed in a final subsection and are further described in Section 8.

7.2 Potential Migration Pathways and Exposure Pathways

Potential migration pathways and exposure pathways have been evaluated and are understood as follows:

- COCs present in soil could migrate across the Revised BCP Site and to off-Site areas (including surface water) via fugitive dust generation from exposed COC-impacted soil, for example during potential future construction activities.
- Due to their physical properties, VOCs present in the subsurface soil or groundwater can vaporize, travel through the soil, and migrate into ambient air or indoor air (i.e., through VI). PCBs are less volatile and less mobile but can still migrate into air.
- PCBs are virtually insoluble to slightly soluble in water and have high organic-carbon partition coefficient (K_{oc}) values and therefore high affinity for soil and low mobility in groundwater.
- Surface water runoff has the potential to transport COCs from localized areas of soil impacts to other areas, for example during potential future construction activities.
- Groundwater flow is inferred to be primarily easterly in the uppermost water-bearing zone at the Site (**Figures 4-6** and **4-7**). The potentiometric surface is relatively flat over the Site with an average hydraulic gradient of approximately 0.0055 feet per foot. COCs in groundwater have the potential to migrate to off-Site areas to the east-northeast. At the ambient groundwater flow rate of 23.8827 ft/day, the volume of groundwater passing through the source material over five decades has accounted for multiple rounds of pore volume flushing in the former source area with dilution of the COC concentrations below the water table. Calculations for the ambient groundwater flow rate are provided in Section 4.4.3.
- Two pumping wells located south of the EHS building draw water used for non-contact cooling water production (**Figure 2-3**). A sample from Pumping Well 1 was analyzed for COCs in July 2021 (Sample ID: RI-SUPPLY-WELL-1) and effluent samples from the cooling system (Sample ID: RI-SUPPLY-WELL-EF) were analyzed in August 2021. Data related to these sampling events are reported in **Table 5-8** through **Table 5-12**. Concentrations of VOCs, 1,4-dioxane, diesel range organics, PCBs, and most metals were not identified above the TOGS groundwater standards. From the July 2021 sampling event, metals concentrations of iron (1,100 µg/L compared to TOGS groundwater standard of 300 µg/L) and lead (33 µg/L compared to TOGS groundwater standard of 25 µg/L), SVOC concentrations including benzo(a)anthracene (0.11 µg/L compared to TOGS groundwater standard of 0.002 µg/L), DEHP (21 µg/L compared to TOGS groundwater standard of 5 µg/L), and chrysene (0.13 µg/L compared to TOGS groundwater standard of 0.002 µg/L), and PFOS (7.4 ng/L compared to NYSDEC human health guidance value of 2.7 ng/L) were detected. Effluent sample results collected in August 2021 showed no exceedances for VOCs, metals, diesel range organics, 1,4-dioxane, or PCBs. One SVOC (DEHP) was detected at 21 µg/L

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compared to the NY TOGS of 5 µg/L and PFOS was detected at 5.2 ng/L, which is above the guidance value of 2.7 ng/L.

- EHS and the nearby surrounding area are serviced by a municipal (supplied) water service, with no evidence of potable wells in the area immediately downgradient of the Site. Institutional controls (ICs) in the ISMP prohibit groundwater use as drinking water or for industrial purposes except for non-contact cooling water. ICs for groundwater use are anticipated to be included in an environmental easement for the Revised BCP Site as part of the SMP.

7.2.1 Fugitive Dust Generation

IRMs completed at the Revised BCP Site have resulted in the installation of EC cover systems (**Figure 3-1A**). Cover systems including buildings, concrete, asphalt, maintained playing fields, and constructed vegetated soil clean cover limit COC migration via fugitive dust from surface soil and shallow subsurface soil as long as impervious (i.e., asphalt and concrete) and vegetated soil covered areas across the Revised BCP Site are maintained and inspected in accordance with the current ISMP and future SMP. Fugitive dust generated during construction activities beneath the EC cover systems is mitigated by procedures and controls required by the ISMP and future SMP that address soil handling and dust controls during intrusive activities at remedial program construction sites. Fugitive dust generation is not relevant as a COC migration or exposure pathway under the current and reasonably anticipated future land use (i.e., restricted-residential) with the exception of a current and future construction worker.

7.2.2 Volatilization

Volatile chemicals, when present in soil or groundwater at elevated levels, might be released to ambient air or building indoor air through volatilization from or through the soil/fill pore space. Volatile chemicals typically have a low K_{oc}, low molecular weight, and a high Henry's Law constant.

VOC and PCB concentrations in indoor air (AOC-1B) are below NYSDOH Soil Vapor/Indoor Air Decision Matrices and USEPA health guidelines. VOCs have been detected in sub-slab vapor (AOC-1A) in isolated areas above NYSDOH guidelines. In occupied areas, potential VI has been mitigated by the installation of multiple SSD Systems. VOCs have also been detected in sub-slab vapor in 2000 and 2009 in spaces that are regularly unoccupied including the boiler room and pool filter room that are used for chemical storage as shown on **Figure 5V-2A-F**. Occupants of EHS are not coming into contact with indoor air in those areas on regular basis.

PCB concentrations in indoor air (AOC-1B) are below USEPA health guidelines. This includes areas of the EHS building where SSDS have been installed and other areas such as the Boys' Locker Room located in the north portion of the EHS building where PCBs remain in soil adjacent to the building foundation.

7.2.3 Surface Water Runoff

Surface water runoff is managed through a stormwater conveyance system. With the existing clean cover, building, and hardscapes, there is no current or future potential for soil particle transport

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with surface water runoff. Although stormwater runoff during excavation activities below the clean cover is possible, erosion and sedimentation controls are implemented during construction as a component of the ISMP. There are no surface water bodies located on the Revised BCP Site. Surface water runoff is not relevant as a COC migration pathway under the current and reasonably anticipated future land use (i.e., restricted-residential) with the exception of the current and future construction activities below the EC soil cover system, which will be managed under the current ISMP and future SMP.

7.2.4 Leaching

Where residual contamination exists in Site soils, there is a potential for migration from soil to groundwater. The completed IRM excavation/removal and off-Site disposal of impacted soil from the Revised BCP Site mitigated potential leaching of COCs from soil to groundwater by removing residual contamination from those excavated areas. Furthermore, significant portions of the Site are covered by impermeable surfaces (i.e., asphalt, concrete, and buildings) that limit infiltration of precipitation, and the soil cover systems in vegetated areas have been graded to prevent ponding of water. As such, leaching is a relevant migration pathway only in areas where PCB and VOC sources remain in place above the water table due to technical impracticability of their removal due to the presence of concrete foundations and historic structures encountered at depths, utility lines, or proximity to the EHS building foundation and below the water table due to the technical impracticability of excavation and dewatering. PCBs are virtually insoluble to slightly soluble in water and have high organic-carbon partition coefficient (K_{oc}) values and therefore high affinity for soil and low mobility, as such the migration potential for PCBs via the leaching pathway is low. The clay layer at the Site is encountered at approximately 34 ft bgs and extends to approximately 78 ft bgs in the FFC. PCBs were detected in the clay layer at B645A from 40.41-42.41 ft bfg at 4.1 mg/kg which is above the PoG SCO. Leaching of PCBs through the clay layer is unlikely to occur given the tens of feet of thickness of the clay layer, the relatively low permeability of the clay, the high affinity of PCBs for soil, and the low mobility of PCBs.

7.2.5 Groundwater Transport

Groundwater flow is inferred to be primarily easterly. COCs present in on-Site groundwater may be transported across the Site via this pathway.

PCB TOGS groundwater standard exceedances have been observed in two areas within the Revised BCP Site Boundary, i) the former slide rail area (MW-103S and MW-103I) and ii) downgradient of AOC-19 (MW-50S, MW-50I, MW-52, MW-51, MW-96, MW-106). PCB concentrations north of the EHS building within the FFC (slide rail area) have been observed to be consistent over time and are defined downgradient. Due to their physical properties, PCBs will not migrate significantly with groundwater; PCB impacts to groundwater have remained near PCB sources.

VOC TOGS groundwater standard exceedances have been observed at the Revised BCP Site within two areas i) downgradient of AOC-19 (MW-50S, MW-50I, MW-51, MW-96) and ii) downgradient of the former area of VOC-impacted soils area in the FFC (now removed by FFC IRM excavation) (MW-11I and MW-99I). VOCs have not been detected above TOGS

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groundwater standards in downgradient off-Site monitoring wells MW-98S, MW-98I, and MW-99S; a slight exceedance was detected at MW-99I (6.8 µg/L compared to the TOGS value of 5 µg/L). Taken together, these define the downgradient extent of VOC impacts in groundwater in those areas. VOC concentrations downgradient of AOC-19 have generally been observed to decrease over time since the removal of the source during IRM #5A2.

SVOCs have historically been reported above TOGS groundwater standards; however, the distribution of SVOC exceedances has been spatially and temporally inconsistent across the Site. SVOC detections have been sporadic and non-repeatable, and the distribution of SVOC exceedances above TOGS groundwater standards does not appear to coincide with AOCs.

Consistent with historical data, the only TOGS exceedances for metals at the Site have been attributed to either false positives (thallium) or related to normal background groundwater redox fluctuations (iron and manganese) and are not considered to be Site-related.

PFAS guidance value exceedances are greatest in groundwater on the upgradient boundary of the Site and typically decrease as groundwater travels across the Site. No on-Site source of PFAS has been identified.

The Site and nearby surrounding area are serviced by a municipal (supplied) water service, with no evidence of potable wells in the area immediately downgradient of the Revised BCP Site. As such, COC transport off-Site via groundwater migration is a relevant migration pathway. A monitoring well network is in place at and downgradient of the Site to monitor water quality conditions.

7.2.6 Exposure Pathways

Based on the fate-and-transport analysis provided above, the pathways through which contaminants detected on-Site could potentially migrate to other areas or media are vapor-to-air volatilization and, to a lesser extent, groundwater transport or intrusive activities beneath the soil cover systems.

Direct contact with COCs in soils has been mitigated by the construction of cover systems. PCBs, metals, and SVOCs remain in place within the soil cover system from 0.17-2 ft bfg as discussed in Section 2.7.6. PCBs, metals and SVOCs remain in soil in the northern, western, and southern parts of the FFC in select areas. These areas include under hardscape cover (sidewalks) on the north side of the EHS building, under hardscape cover (sidewalks) on the west side of the FFC, and within a vegetated area west of the long jump area. Metals remain in soil in the NAF near south main street adjacent to a historic concrete wall and subsurface utilities. PCBs remain in soil in the southern portion of the NAF. SVOCs remain in place on the western portion of the NAF, along the property boundary adjacent to off-Site residential properties. PCBs and SVOCs remain in place in the Main Parking Lot and Tennis Courts area, under hardscape cover (tennis courts and the student parking lot). PCBs and metals remain in place in the Rear Parking Lot Area, under hardscape cover (asphalt parking lot) or adjacent to the #c808054 boundary.

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Native soil remains in place outside of the IRM footprints, but within the BCP limits. Due to the historical property use and COCs identified in soil, these native soils remaining in place require demonstrations of either a minimum of 6 inches of impervious cover system (i.e., concrete, asphalt, with clean stone) or verification for pervious ground cover areas to demonstrate soil quality compliance with soil cover criteria. This demonstration was completed through SCV testing for the Site, with results documented in Section 6.3.

SCV sampling of imported topsoil and structural fill in the FFC detected arsenic and select SVOCs above Restricted Residential SCOs between 0.17 and 2 ft bgs in the northern, western and eastern portions of the FFC. Those exceedances are sporadic, spatially limited and bounded, and are associated with materials imported to the Site from borrowed sources. Details are provided in **Appendix Q.**

Given the cover systems, the anticipated environmental easement that will restrict groundwater for potable use, and the current ISMP and future SMP that addressed NYSDEC/NYSDOH requirements for soil handling and dust controls during future excavation at remedial program construction sites, it is unlikely that Site-related contaminants would reach potential receptors at significant exposure point concentrations. Additionally, while SSD Systems do not provide mitigation for the entire Site building, the SSD Systems exist in portions of the Site building where potential vapor intrusion concerns have been identified and the SSD Systems mitigate the potential for Site-related contaminants to reach potential receptors via the vapor intrusion exposure pathway. VOCs included on NYSDOH Soil Vapor/Indoor Air Decision Matrices have not been detected above the indoor air guideline values for mitigation under ISMP post-mitigation monitoring, indicating that the migration pathway outside of the SSD Systems is incomplete. This confirms that the SSD Systems are effectively mitigating potential vapor intrusion. For areas of the building outside the SSD system zones of influence, the 2014 Vapor Intrusion Assessment and the 2018 SVIA evaluated sub-slab vapor and indoor air (under HVAC occupied and unoccupied conditions) at locations approved by NYSDEC and NYSDOH throughout the EHS building. No indoor air sample collected in 2014 or 2018 exceeded the applicable NYSDOH guideline values for mitigation that were in effect at the time. Sub-slab vapor and indoor air results evaluated in accordance with NYSDOH Matrices resulted in recommended actions of no further action for those areas, with the exception of the Room 127/F-Wing (SSD system installed in 2014) and Room 148 in the Music Wing (SSD system installed in 2018). Other areas of the EHS building where vapor mitigation systems have not been installed, such as the pool filter room and the boiler room, are not regularly occupied so occupants are not regularly exposed to indoor air in those areas.

7.3 COC Persistence and Migration

7.3.1 PCBs

Although biological degradation of PCBs is possible, PCBs typically persist in the environment for long periods due to their general inertness and low solubility in water (ATSDR, 2000). PCBs tend to have high n-octanol/water partition coefficients (K_{ow} or log K_{ow}). In general, the more chlorinated PCB molecules exhibit the strongest hydrophobic interactions and thus the highest K_{ow}. Coupled with low water solubility, these high log K_{ow} values indicate that PCBs are likely to

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be adsorbed to sediment rather than dissolved in the water column. PCBs sorb strongly to organic matter in soils and sediment and are unlikely to leach extensively (ATSDR, 2000).

7.3.2 Metals

Because metals do not readily degrade, they are also likely to persist in the environment. Metals can transport into surface water through surface stormwater runoff, subsurface flow, groundwater connection to surface water as well as soil erosion. Metals are not highly soluble in water at ambient temperatures and low to intermediate pH levels and therefore will also likely bind to soil and sediment. Thus, metals are likely to be adsorbed to soil or sediment (e.g., clay, sediment organic matter) rather than dissolved in the water column. Additionally, metals can precipitate and become part of soil and sediment (e.g., carbonates, sulfides, phosphates). Changes in sediment geochemistry (e.g., changes in pH or redox potential) can result in metals being resuspended as ions.

7.3.3 SVOCs

PAHs are present both as naturally occurring (petrogenic) and generated through incomplete combustion and pyrolysis of organic matter (pyrogenic), with natural and anthropogenic sources including forest fires, incomplete combustion of fossil fuels in vehicles, wood, asphalt, and heating fuel oils. Residual fuel materials such as oil, coal, and gasoline can also be sources of PAHs, especially in urban areas where fuel oil or coal have been used for residential heating or where petroleum storage tanks are present. PAHs from pyrogenic sources are capable of long-distance transport and contribute to ubiquitous environmental PAH and PAHs from petrogenic sources are ubiquitous and often occur as a diffuse “anthropogenic background” signature in areas with a long history of human habitation.

PAHs have a non-polar hydrophobic structure that allows them to be adsorbed tightly to the organic matter in soils and sediments. PAHs bound to soils and sediments tend to be less mobile and more resistant to biological degradation. Transfer of PAHs from soil can occur through a number of biological processes including leaching to groundwater, volatilization, photooxidation, and uptake by plants or microbial degradation. Sediment bound PAHs enter pores in sediments, attaching to colloids in porewater. PAHs bound to colloids are likely the most significant proportion of the bioavailable fraction in the environment.

7.3.4 VOCs

Although VOCs can migrate from subsurface soil or groundwater through volatilization into the ambient or indoor air, once dissolved in groundwater they are more persistent due to the low dissolved oxygen levels. Additionally, in the saturation zone, VOCs can move with the groundwater depending on their solubility and how they interact with aquifer solids (e.g., adhere to organic carbon in the solids). For example, highly soluble VOCs move with the groundwater, whereas other VOCs may slow if they adsorb to organic carbon present in aquifer solids.

The primary migration pathway of VOCs in the unsaturated zone is by diffusion; however, a number of factors, including soil particle size, porosity, permeability, soil moisture, and organic matter content can influence the movement of VOCs. Additionally, the presence of structures, such

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as surface pavement or buildings, can alter the behavior of soil gases. For example, surface pavement may lead to the accumulation of certain VOCs in soil gas beneath a building or off-Site migration, or both. Pressure gradients between the ground and the inside of the building may result in migration of soil gases towards the buildings. Migration of VOCs into buildings may occur through cracks or gaps in the solid pavement and floors, joints formed through the construction process, fractures in the subsurface walls, around and through service pipes and ducts, and in wall cavities.

7.3.5 Emerging Contaminants

Emerging contaminants investigated at the Site include 1,4-dioxane and PFAS (PFOS and PFOA). Infiltration of 1,4-dioxane through soil and into groundwater occurs with minimal retardation because of its miscibility in water and low potential for adsorption to organic carbon. Once in groundwater, there is minimal potential for retardation via sorption in the aquifer matrix. The low volatilization potential for 1,4-dioxane limits potential for vapor intrusion (ITRC, 2021). The resistance of most PFAS (PFOS and PFOA) to biotic or abiotic transformation means that physical transport processes are critical for PFAS (PFOS and PFOA) transport and potential for exposure. In groundwater, advection drives PFAS (PFOS and PFOA) mobility in many cases. PFAS (PFOS and PFOA) are resistant to microbial transformation and are thus anticipated to be persistent in the environment (ITRC, 2023).

7.4 Actual and Potential Receptors

The identification of potential human receptors is based on the characteristics of the Site, the surrounding land uses, and the probable future land uses. The Revised BCP Site is currently being used as a high school. As such, under current use conditions, potential receptors would be limited to students and faculty, school employees and visitors, trespassers who might traverse the Revised BCP Site, and construction workers that access the Revised BCP Site to maintain subsurface utilities and construct new facilities. Trespassers might include adolescents and adults, whereas construction workers would be limited to adults.

The reasonably anticipated future use of the Revised BCP Site is for a restricted-residential-like use, which is consistent with surrounding property use and zoning. The potential receptors to be considered under the future use scenario would therefore include indoor occupants and workers (students and faculty), outdoor recreational users (students and faculty), outdoor workers (e.g., adult groundskeepers or maintenance staff), and to a lesser extent adult construction workers who may be employed at or perform work on the property. Consideration of these potential receptors would also be conservatively protective of the future Site visitor or trespasser.

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8. QUALITATIVE HUMAN HEALTH RISK ASSESSMENT

8.1 Human Health Exposure Assessment

A qualitative exposure assessment consists of characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating chemical fate and transport.

An exposure pathway describes how contaminants originating from a site may migrate through environmental media and result in human exposure, and is used to identify and characterize potentially exposed populations under current and reasonably anticipated future land use conditions. An exposure pathway has five elements:

- A receptor population
- A contaminant source
- A contaminant release and transport mechanism
- A point of exposure
- A route of exposure

The *receptor population* is the people who are or could be exposed to contaminants at a point of exposure. The *contaminant source* is defined as either the source of contaminant release to the environment (such as a waste disposal area or point of discharge) or the impacted environmental medium (soil, air, biota, water) at the point of exposure. *Contaminant release and transport mechanisms* carry contaminants from the source to points where people might be exposed. The *point of exposure* is a location where actual or potential human contact with a contaminated medium can occur. The *route of exposure* is the way a contaminant enters or contacts the body (i.e., ingestion, inhalation, dermal absorption).

An exposure pathway is *complete* when all five elements listed above are present. A *potential* exposure pathway exists when one or more of the five elements that make up an exposure pathway are not present but could reasonably occur. An exposure pathway may be *eliminated* from further evaluation when any one of the five elements that make up an exposure pathway do not exist in the present and will not exist in the future.

8.1.1 Potential Receptors

The identification of potential human receptors is based on the characteristics of the Site, the surrounding land uses, and the probable future land uses. The Revised BCP Site is currently being used as a high school. As of 2026, approximately 1,350 students attend the high school. Under current use conditions, potential receptors would be limited to students and faculty, school employees and visitors, trespassers who might traverse the Revised BCP Site, and construction workers that access the Revised BCP Site to install subsurface utilities and construct new facilities. Trespassers might include adolescents and adults, whereas construction workers would be limited to adults.

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The reasonably anticipated future use of the Revised BCP Site is for a restricted-residential use, which is consistent with surrounding property use and zoning. The potential receptors to be considered under the future use scenario would therefore include indoor occupants and workers (students and faculty), outdoor recreational users (students and faculty), outdoor workers (e.g., adult groundskeepers or maintenance staff), and to a lesser extent adult construction workers who may be employed at or perform work on the property. Consideration of these potential receptors would also be conservatively protective of the future Site visitor or trespasser.

8.1.2 Contaminant Sources

A contaminant source is defined by DER-10 and for the purposes of the human health risk assessment as either the source of contaminant release to the environment (such as a waste disposal area or point of discharge) or the impacted environmental medium (soil, air, biota, water) at the point of exposure. Impacted environmental media at the Site include soil, soil vapor, and groundwater with contamination where analytical results exceed applicable standards, including Unrestricted Use SCOs, Restricted Residential SCOs, PoG SCOs, NYSDOH Soil Vapor/Indoor Air Decision Matrix guideline values, and TOGS groundwater standards. Section 6 discusses the COCs present in Site media (soil, soil vapor, and groundwater) above Restricted Residential SCOs, NYSDOH Soil Vapor/Indoor Air Decision Matrices guideline values, and TOGS groundwater standards, respectively following IRMs, placement of cover systems, and implementation of VI mitigation. In general, contamination is limited to select metals, SVOCs, VOCs, and PCBs in subsurface soil below two feet of clean cover, hardscape, or building, VOCs in soil vapor in certain areas beneath the building, and VOCs and PCBs in groundwater in localized areas. The following paragraphs describe contamination in each environmental medium in more detail.

There are no exceedances of Restricted Residential SCOs in surface soil from 0-0.17 ft bgs. Shallow subsurface soil contamination due to exceedances of Restricted Residential SCOs for PCBs, metals, and SVOCs is restricted to localized areas at shallow depths (up to 2 ft bgs) beneath engineered cover systems. The EC soil cover system is comprised of a minimum of 24-inches of imported material overlain by asphalt, concrete pavement, vegetative cover, or stone. A complete list of COCs that exceed Restricted Residential SCOs in soils above 2 ft bgs within the Revised BCP Site boundaries, regardless of depth, is presented in **Table 8-1**. COC exceedances remaining in soils up to 2 ft bgs are discussed in more detail in the following paragraphs.

At the FFC, exceedances of Restricted Residential SCOs remain beneath concrete sidewalks on the west and south sides of the FFC (**Figure 6-4A**). In addition, SCV sampling of imported topsoil and structural fill in the FFC detected arsenic and select SVOCs above Restricted Residential SCOs between 0.17 and 2 ft bgs in the northern, western and eastern portions of the FFC. Those exceedances are sporadic, spatially limited and bounded, and are associated with materials imported to the Site from borrowed sources. Details are provided in **Appendix Q.**

At the Tennis Courts, PCBs and PAHs remain below asphalt pavement along the western edge of the former excavation (**Figure 6-5A**). In the Rear Parking Lot, PCBs persist in subsurface soil near former excavation limits and adjacent to building foundations (**Figure 6-6A**). In the NAF, mercury remains within the soil cover system near South Main Street (**Figure 6-3A**). The presence of the

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engineered cover system controls the exposure pathway for receptors to soil. Receptors can contact contamination if pavements are not maintained or are removed during ground-intrusive work at the Site.

Contamination in subsurface soil lies in locations where removal is technically impracticable due to proximity to building foundations, utilities, historic structures, or the water table and are beneath the engineered cover systems, which control the exposure pathway for receptors to soil. Receptors can come into contact with contaminated subsurface soils if ground-intrusive work extends below the EC cover system. A demarcation barrier has been installed above contaminated subsurface soils to alert workers of the potential presence of contamination beneath the EC cover system. Contamination above Restricted Residential SCOs across the Site includes PCBs, metals, SVOCs, and VOCs. A complete list of COCs that exceed Restricted Residential SCOs in soils below 2 ft bgs within the Revised BCP Site boundaries, regardless of depth, is presented in **Table 8-1**. Total PCBs above TSCA level (>=50- mg/kg) remain north of the EHS building and on the west side of the EHS building between 6-37 ft bgs. PCB impacts exceeding TSCA levels are between 3.4-12 ft bgs in the Rear Parking Lot adjacent to the EHS building and along the utility corridor between the water line and storm sewer and on the NAF between 14-30 ft bgs. Additional subsurface impacts include PCBs beneath the Main Parking Lot at depths of 2-16 ft bgs, along with metals lead, chromium, and arsenic in isolated zones. Total PCBs above TSCA level do not remain in the Main Parking Lot area.

Groundwater quality at the Revised BCP Site reflects localized exceedances of TOGS standards. Two areas of total PCBs TOGS groundwater standard exceedances were observed at the Revised BCP Site, i) the former slide rail area (MW-103S and MW-103I) and ii) downgradient of AOC-19 (MW-50S, MW-50I, MW-52, MW-51, MW-96, MW-106) as shown on **Figure 6-1A** and **Figure 6-2A** for low- and high-water table conditions, respectively. Two areas of VOC exceedances of TOGS groundwater standards were observed at the Revised BCP Site, i) downgradient of AOC-19 (MW-50S, MW-50I, MW-51, MW-96) and ii) downgradient of the former area of VOC-impacted soils area in the FFC (now removed by FFC IRM excavation) (MW-11I and MW-99I) as shown on **Figure 6-1D** and **Figure 6-2D** for low- and high-water table conditions, respectively. The groundwater exposure pathway is incomplete because groundwater is not being used for drinking water. Supply wells for non-contact cooling water are located south of the EHS building within the New BCP Site. The area is served by a public water supply and there are no domestic water supply wells at or immediately downgradient of the Site. Receptors could contact groundwater if private wells are installed on or downgradient of the Site in the future.

Soil vapor beneath the building is impacted by VOCs including 1,1,1-TCA, TCE and cis-1,2-DCE, which were detected in sub-slab vapor above NYSDOH Soil Vapor/Indoor Air Decision Matrix guidelines below the Gymnasium in 2009 below Room 130, Room 127, Room 125, Room 124 and the Hallway outside of the Guidance offices and Room 127 in 2014, and below Room 148 in 2018. Based on those findings, an SSD System and vapor barrier were installed in the Gym in 2010; an SSD System was installed in the F-Wing in 2014; and an SSD System was installed in the Music Wing in 2018. In addition, SSD Systems were installed in the K-Wing in 2009 and Cafeteria in 2013 prophylactically as part of capital improvements. Receptors are not contacting

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impacted soil vapor because vapor barriers have been installed and SSD Systems are actively operated and monitored. Indoor air quality is routinely sampled, and periodic floor crack inspections are conducted to identify any floor cracks that require sealing. VOCs included on NYSDOH Soil Vapor/Indoor Air Decision Matrices have not been detected above the indoor air guideline values for mitigation under ISMP post-mitigation monitoring. TCE was detected in sub-slab vapor above NYSDOH Soil Vapor/Indoor Air Decision Matrix guidelines in 2000 and 2009 in the pool filter room and boiler room. These rooms are used for chemical storage and are not regularly occupied.

There are no PCB impacts to indoor air quality above the USEPA PCB Exposure Level (0.1 µg/m³). Detections of PCB Aroclors in indoor air samples were two orders of magnitude less than the USEPA PCB Exposure Level. Receptors could contact subsurface contamination if ground-intrusive work extends below the floor of the building or building foundations.

8.1.3 Contaminant Release and Transport Mechanisms

Contaminant release and transport mechanisms are specific to the type of contaminant and Site use. For the non-volatile contaminants present in soil, contaminant release and transport mechanisms will generally be limited to fugitive dust migration and direct contact during intrusive work (e.g., during construction below the cover), as the Revised BCP Site is covered by buildings and EC cover systems.

Subsurface impacts include PCB concentrations above the PoG SCO north of the EHS building within the FFC, where soils remain in place below the water table due to technical impracticability (**Figures 6-4I–J**). Additional PoG SCO exceedances occur in the NAF for PCBs, TCE, and PCE below the water table, and in the southeast portion of the Football Field Complex for PCBs (**Figures 6-3B–H** and **6-4I–J**).Transport mechanisms for PCBs, metals, SVOCs, and VOCs in soil at the Site above PoG SCOs include migration from soil to groundwater, which can degrade groundwater quality and create a groundwater pathway exposure.

For VOCs in soil vapor and groundwater, the potential exists for exposure through the soil vapor migration pathway. This would include both the outdoor pathway (primarily to construction workers involved in subsurface activities where volatiles are present at elevated concentration) as well as the indoor VI pathway.

Concerning the indoor air pathway, NYSDOH has issued a guidance document for assessing potential impacts to indoor air via soil vapor intrusion (NYSDOH, 2017). This guidance has been applied to Site conditions and data to evaluate the VI pathway and includes Air Guideline Values for VOCs and Soil Vapor/Indoor Air Decision Matrices that recommend actions to address VI under various conditions.

Concerning the outdoor air pathway, the potential exists for exposure to VOCs under the current and future use scenarios for construction workers in select areas of the Site. For the current and reasonably anticipated future use of the Site, concern regarding vapor migration under the building is mitigated by the SSD System.

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8.1.4 Point of Exposure

The *point of exposure* is a location where actual or potential human contact with a contaminated medium can occur. Based on the exceedances of Restricted Residential SCOs beneath the soil cover for certain metals, PCBs, and SVOCs, the point of exposure is defined as the overall Revised BCP Site beneath the EC cover systems. These cover systems were constructed to isolate contamination and eliminate points of exposure to soil under current conditions. This limits potential points of exposure to future ground intrusive work. In these scenarios, construction workers could encounter PCBs, VOCs, metals, or SVOCs remaining in inaccessible zones adjacent to building foundations and utility corridors (e.g., West of A-Wing and the Rear Parking Lot) or at depth where removal was technically impracticable. Such activities could expose workers to contaminants through inhalation, skin contact, and incidental ingestion.

For both the current and future use scenarios, groundwater is not considered to pose a relevant mechanism due to the isolated and localized groundwater impacts, the removal of impacted soil during the IRMs, the availability of a local municipal potable water source, the depth to groundwater (greater than 4.5 feet; the standard depth of utilities and foundation footers), and the anticipated environmental easement that will not allow the use of Site groundwater without treatment with the exception of use as non-contact cooling water.

The point of exposure to soil vapor is controlled by vapor barriers and SSD Systems beneath the EHS building. Potential points of exposure are limited to future ground intrusive work beneath the EHS building.

8.1.5 Route of Exposure

Based on the types of receptors and points of exposure identified above, potential routes of exposure are listed below:

- Current Use Scenario
  - Indoor Occupants: inhalation
  - Construction Worker: skin contact, inhalation, and incidental ingestion
- Future Use Scenario
  - Indoor Occupants: inhalation
  - Construction Worker: skin contact, inhalation, and incidental ingestion

8.1.6 Exposure Assessment Summary

The framework provided in DER-10 Appendix 3B was used to summarize the exposure assessment. The summary is organized by environmental media and exposure route, integrating findings from the preceding sections on potential receptors, contamination sources, contaminant release and transport mechanisms, points of exposure, and routes of exposure.

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Environmental Media & Exposure Route	Human Exposure Assessment
Direct contact with shallow subsurface soils (and incidental ingestion)	• Receptors are not contacting shallow subsurface soils because of current cover systems buildings, sidewalks, parking lots and clean cover soil. Such impervious and clean soil comprise the EC soil cover system at the Site. Receptors can contact shallow subsurface soil during ground-intrusive work below the EC cover system. • Construction workers could contact shallow subsurface soil during ground-intrusive work below the EC cover system. Exposure is prevented through the controls required under the ISMP and future SMP.
Direct contact with subsurface soils (and incidental ingestion)	• Receptors can contact subsurface soil during ground-intrusive work at the Site that extends below the EC cover system that has been emplaced at the Site. • A demarcation barrier is in place in subsurface soils to alert people completing ground-intrusive work at the Site of the potential presence of contaminated soils beneath the EC cover system. • Construction workers could contact shallow surface soil during ground-intrusive work below the EC cover system. Exposure is prevented through the controls required under the ISMP and future SMP.
Ingestion of groundwater	• Groundwater is not being used for drinking water, as the area is served by the public water supply. • There are no domestic water supply wells at or immediately downgradient of the areas of impacted groundwater. • Receptors can contact groundwater if private wells are installed on or downgradient of areas of impacted groundwater in the future.
Direct contact with groundwater	• Receptors can contact groundwater, if they complete ground-intrusive work at the Site that extends below the depth of the water table (approximately 16 ft bgs), which is highly unlikely.

Inhalation of air (exposures related to soil vapor intrusion)	• Receptors are not contacting impacted vapor in indoor air because vapor barriers have been installed in the on-Site building to prevent the indoor air quality from being affected by subsurface contamination. • Receptors are not contacting impacted vapor in indoor air because an SSD System is operated, maintained, monitored, and routinely inspected in the on-Site building to prevent indoor air quality from being affected by subsurface contamination. • Indoor air quality is sampled as a routine check of the effectiveness of the SSD Systems in preventing exposures related to soil vapor intrusion. • A periodic inspection program is in place to identify and seal cracks, if any, in the floor of the on-Site building to prevent indoor air quality from being affected by subsurface contamination. • Receptors can contact impacted soil during ground-intrusive work at the Site that extends below the EC cover system. • Occupied building areas outside the zones of influence of the existing SSD Systems were evaluated through the 2018 SVIA. These data do not indicate a complete or significant soil vapor intrusion pathway in unmitigated areas as observed indoor air concentrations were below NYSDOH Matrix Guideline values (Figures 5V-1Ai through 5V-1Fii).

Based on the above assessment, the potential exposure pathways for the current and future use conditions are listed below.

8.1.6.1 Indoor Occupant

The indoor occupant exposure pathway was evaluated for the entire EHS Building footprint, including areas with and without SSD Systems. In areas served by a SSD System (K-Wing, Gymnasium, Cafeteria, F-Wing, and Music Wing), the exposure pathway for the indoor occupant due to inhalation of VOCs migrating indoors from impacted soil or groundwater beneath the building is incomplete under current use based on installation of vapor barriers and current operations of SSD Systems, as well as the inspection and sealing of floor cracks required under the ISMP. This exposure pathway will continue to be incomplete under future use assuming continued inspection and sealing of floor cracks and continued operation of the SSD Systems as part of the SMP, or until sub-slab VOC concentrations have decreased to below NYSDOH Soil Vapor/Indoor Air Decision Matrices concentrations. Occupied building areas outside the SSD System zones of influence were evaluated through the 2018 SVIA, which NYSDEC requested to

assess unmitigated areas. As part of the SVIA, sub-slab vapors were detected in Room 148 above NYSDOH guidance values and subsequently mitigated. No other indoor air samples exceeded NYSDOH guideline values from samples collected with the HVAC system in occupied mode, and detections of other VOCs were attributed to background sources. These data indicate that soil vapor intrusion is not a significant exposure concern in unmitigated areas.

8.1.6.2 Construction Worker

The exposure pathway for the construction worker is complete under both current and reasonably anticipated future use. Residual COCs remain in soil beneath the cover systems. Construction workers could contact these soils by direct contact, incidental ingestion, and inhalation of volatile and non-volatile contaminants during ground-intrusive work that extends below the cover systems, such as utility installation and repair or building construction. Exposure is prevented through implementation of proposed field controls that are required for intrusive work under the ISMP and will continue under the SMP as part of the final remedy. These controls include:

- notification to NYSDEC and an Excavation Work Plan before intrusive activities
- worker training and a site-specific health and safety plan
- the demarcation layer placed above residual contamination, which alerts workers to the presence of impacted soil below the cover
- community air monitoring and dust controls
- appropriate personal protective equipment and decontamination procedures
- soil handling, characterization, and disposal requirements

With these field controls implemented and maintained in accordance with the ISMP and the future SMP, the potential for construction worker exposure to Site-related contaminants is prevented or minimized.

8.2 Fish and Wildlife Resources Impact Analysis

The Revised BCP Site has been historically developed for more than a century and has undergone significant fill import associated with historical construction of the plant and later the school. These activities greatly limit the ecological value of the property. The only proximate surface water bodies are Miller Pond and Coldbrook Creek, located to the east of the Revised BCP Site boundary. Most of the fauna anticipated to be on the Site are avian and small mammal species. The proximity of the surrounding urbanized areas, including adjoining major transportation corridors (e.g., Main Street, NSRC railroad) further detracts from habitat and foraging.

The Revised BCP Site is currently developed as a high school with driveways, parking lots, and recreational areas consistent with athletic and recreational land use. Buildings, parking lots, driveways, recreational areas, and maintained ornamental landscaping substantially limit availability of suitable cover type for establishment of biota.

Based on these factors, the Fish and Wildlife Resources Impact Analysis Decision Key included as **Appendix M** (NYSDEC, 2010; Appendix 3C) indicates no fish and wildlife resources impact analysis is warranted.

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9. ALTERNATIVES ANALYSIS

9.1 Purpose and Objectives

This section provides an analysis of remedial alternatives by media using the remedy selection evaluation criteria identified in DER-10 Section 4.2 (NYSDEC, 2010). In accordance with DER-10 Section 4.4(d)2, remedial alternatives developed for soil will include one alternative that achieves unrestricted use without ICs or ECs and one alternative that achieves restricted use with ICs and ECs consistent with current and reasonably anticipated future land use.

9.2 Standards, Criteria, and Guidance and Remedial Action Objectives

9.2.1 Standards, Criteria, and Guidance

According to DER-10 Section 1.3(b)71, *standards*, *criteria, and guidance* (SCGs) refer to the

> standards and criteria that are generally applicable, consistently applied, and officially promulgated, that are either directly applicable or not directly applicable but are relevant and appropriate, unless good cause exists why conformity should be dispensed with, and with consideration being given to guidance determined, after the exercise of scientific and engineering judgment, to be applicable This term incorporates both the Comprehensive Environmental Response, Compensation, and Liability Act concept of "applicable or relevant and appropriate requirements" and the EPA's "to be considered" category of non-enforceable criteria or guidance. For purposes of this Guidance, "soil SCGs" mean the soil cleanup objectives and supplemental soil cleanup objectives identified in 6 NYCRR 375-6.8 and the Commissioner Policy CP-51 on Soil Cleanup Guidance. (NYSDEC, 2010)

Additional discussions concerning the specific chemical-, action-, and location-specific SCGs that may be applicable, relevant, or appropriate to remedy selection at the Revised BCP Site are presented below. In each case, the identified SCGs are generally limited to regulations or technical guidance in lieu of the environmental laws from which they are authorized, as the laws are typically less prescriptive in nature and are inherently considered in the regulatory and guidance evaluations.

9.2.1.1 Chemical-Specific SCGs

Chemical-specific SCGs are usually health- or risk-based concentrations in environmental media (e.g., air, soil, water), or methodologies that when applied to site-specific conditions result in the establishment of concentrations of a chemical that might be found in or discharged to the ambient environment. The determination of potential chemical-specific SCGs for a site is based on the nature and extent of contamination; potential migration pathways and release mechanisms for site contaminants; the reasonably anticipated future site use; and the likelihood that exposure to site contaminants will occur.

RI and IRM sampling included the collection and analysis of surface, shallow subsurface, and subsurface soil. Those data were compared to the SCOs in 6 NYCRR Part 375 for unrestricted use, restricted residential use and protection of groundwater. Groundwater analytical data collected during the RI and IRM were compared to TOGS groundwater standards and ambient water quality

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guidance values for PFOS and PFOA. Indoor air and sub-slab vapor analytical data collected during the RI and under the ISMP were compared to NYSDOH Soil Vapor/Indoor Air Decision Matrices concentration.

9.2.1.2 Location-Specific SCGs

Location-specific SCGs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they are in a specific location. Some examples of these unique locations include floodplains, wetlands, historic places, and sensitive ecosystems or habitats. The location of the site is a fundamental determinant of its impact on human health and the environment.

9.2.1.3 Action-Specific SCGs

Action-specific SCGs are restrictions placed on particular treatment or disposal technologies. Examples of action-specific SCGs are effluent discharge limits and hazardous waste manifest requirements.

9.2.2 Remedial Action Objectives

The development of an appropriate remedial approach begins with definition of site-specific remedial action objectives (RAOs) to address substantial public health and ecological risk or other significant environmental issues identified during remedial investigations.

In developing the RAOs, consideration is given to the reasonably anticipated future use of the Site (i.e., restricted residential use) and the applicable SCGs. Accordingly, appropriate RAOs for the Revised BCP Site have been defined below.

9.2.2.1 Groundwater

RAOs for Public Health Protection

a. Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

b. Prevent contact with, or inhalation of volatiles, from contaminated groundwater. RAOs for Environmental Protection

c. Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

d. Prevent the discharge of contaminants to surface water.

e. Remove the source of ground or surface water contamination.

9.2.2.2 Soil

RAOs for Public Health Protection

f. Prevent ingestion/direct contact with contaminated soil.

g. Prevent inhalation exposure to contaminants volatilizing from soil. RAOs for Environmental Protection

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h. Prevent migration of contaminants that would result in groundwater, surface water, or sediment contamination.

i. Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain

9.2.2.3 Soil Vapor

RAOs for Public Health Protection

j. Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

9.2.3 General Response Actions

General response actions (GRAs) are broad classes of actions that are developed to achieve the RAOs and form the foundation for the identification and screening of remedial technologies and alternatives.

9.2.3.1 Soil

The GRAs available to address the RAOs for soil include the following:

- Excavation and off-Site disposal
- ECs (e.g., cover systems)
- ICs (e.g., SMP, environmental easement)

9.2.3.2 Groundwater

The GRAs available to address the RAOs for groundwater include the following:

- In-situ source treatment below the water table
- Monitored natural attenuation
- ICs (e.g., groundwater use restrictions)

9.2.3.3 Soil Vapor

The GRAs available to address the RAOs for soil vapor include the following:

- Source removal
- ECs (e.g., SSD Systems, vapor barriers).
- ICs (e.g., SMP, environmental easement).

9.3 Development of Alternatives

This section describes the development of remedial alternatives for the Revised BCP Site in accordance with DER-10 Section 4.2. Potential remedial alternatives are identified for all media in Section 9.3.1 and assembled into remedial alternatives in Section 9.3.2.

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9.3.1 Potential Remedial Alternatives

This section identifies potential remedial alternatives for soil, groundwater and soil vapor in accordance with DER-10 Section 4.2 Step 4. Remedial technologies were screened for effectiveness and implementability.

9.3.1.1 Soil

Comparison to Unrestricted SCOs (Track 1 Cleanup)

Exceedances of the Part 375 unrestricted use SCOs, primarily for PCBs and metals, are noted for soils that remain in place as described in Section 6. Due to the nature of the COCs observed in Site soil at the Revised BCP Site and the extent to which they exceeded the unrestricted use SCO, it is likely that a significant portion of the Revised BCP Site defines the impacted soil area. Exceedances of the unrestricted use SCOs were observed generally to the depth of the water table (i.e., 14-16 ft bgs); there were limited observed exceedances below the water table. Therefore, this alternative will conservatively assume a depth of impact of 16 ft bgs, which is coincidentally the depth the water table was encountered. Thus, the volume of impacted soil/fill requiring remediation under a Track 1 cleanup is approximately 626,000 cubic yards (1,190,000 tons).

The nature and extent of COCs in soil beneath the EHS building footprint was not defined during the RI due to access and technical limitations. Limited data for soil beneath K-Wing shows exceedances of Restricted Residential SCOs. A Track 1 soil cleanup will require demolition of the EHS building to complete the soil investigation and excavation below the building footprint.

Comparison to Restricted-Use SCOs (Track 4 Cleanup)

Under a Track 4 cleanup for the Revised BCP Site, soil with concentrations above Restricted Residential SCOs would require a 2-foot soil or impervious (hardscape) cover system to be protective of human health for the typical property user (i.e., students, faculty, recreational users of the property). The Track 4 cleanup also must consider (1) the less common exposure scenario of the outdoor worker who may need to perform periodic maintenance or subsurface construction (e.g., utility repairs) involving work beneath the cover system and (2) the need to remediate grossly impacted soil/fill (such as those exhibiting petroleum impact) where feasible per NYSDEC cleanup policy. As these concerns were substantially addressed via the IRM and response action activities described in Section 3.2, the remaining Track 4 cleanup activities would include existing EC cover systems and ICs (i.e., land use restrictions, SMP, and environmental easement) as components of the final remedy to reduce future potential exposure to impacted soil.

The nature and extent of COCs in soil beneath the EHS building footprint was not defined during the RI due to access and technical limitations. A Track 4 soil cleanup will include provisions in the SMP for future soil investigation and potential remediation beneath the building footprint if/when the building or portions of the building are demolished, or currently inaccessible areas become accessible.

9.3.1.2 Groundwater

Groundwater COC TOGS exceedances have included those for PCBs, VOCs, SVOCs, PFAS (PFOS/PFOA), and metals. SVOCs have historically been reported above TOGS groundwater standards; however, the distribution of SVOC exceedances has been spatially and temporally

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inconsistent across the Site and does not appear to be Site-related. SVOC detections have been sporadic and non-repeatable, and the distribution of SVOC exceedances above TOGS does not appear to coincide with AOCs. PFAS has been reported above TOGS groundwater standards primarily in the southern portion of the Site; however the highest concentrations are detected along the upgradient boundary of the Site. No onsite sources of PFAS have been identified so PFAS impacts are not considered to be Site-related COCs as exceedances. TOGS exceedances for metals at the Site have been attributed to being either false positives (thallium) or related to normal background groundwater redox fluctuations (iron and manganese) and are not considered to be Site-related COCs.

PCB TOGS groundwater standard exceedances have been observed in two limited, defined areas within the Revised BCP Site Boundary, in the former slide rail area (MW-103S and MW-103I) and downgradient of AOC-19 (MW-50S, MW-50I, MW-52, MW-51, MW-96, MW-106) as shown. VOC TOGS groundwater standard exceedances have similarly been observed within a limited, defined area downgradient of AOC-19 (MW-50S, MW-50I, MW-51, MW-96) and downgradient of the former area of VOC-impacted soils area in the FFC (MW-11I and MW-99I).

PCB concentrations in the former slide rail area have been observed to be consistent over time and are defined downgradient within the Revised BCP Site. In the NAF downgradient of AOC-19, PCB and VOC TOGS groundwater standard exceedances have been observed to generally decrease over time and are defined off-Site. VOC concentrations downgradient of the former area of VOC-impacted soils area in the FFC are defined off-Site. With respect to the limited areas of impacted groundwater, the soil source above the water table has been removed.

Over 50 years have passed since former Sperry Remington operations ceased in 1972. At the ambient groundwater flow rate of 23.8827 ft/day, the volume of groundwater passing through the source material over five decades has accounted for multiple rounds of pore volume flushing in the former source area with dilution of the COC concentrations below the water table. Calculations for the ambient groundwater flow rate are provided in Section 4.4.3. Additionally, as part of the Site IRMs, multiple source areas for COCs in groundwater (e.g., AOC-19 drum nest, former TCE impacted soils area) have been removed and are no longer contributing to groundwater quality impacts. Now that COC source material above the water table has been removed the concentration and distribution of COCs in groundwater will remain stable or decrease under these groundwater flow conditions.

Under a Track 1 or Track 4 cleanup for soils, the remedial program could include long-term ICs to restrict groundwater use. Off-Site migration of COCs in groundwater will be addressed in the remedial program for the Groundwater COC TOGS exceedances off-Site (east) and are a part of the Former Sperry Remington Site – North Portion 2 (NYSDEC Site No. #C808054).

Potential remedial alternatives for groundwater based on the GRAs presented in Section 9.2.3.2 are as follows.

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In-Situ Source Treatment below the Water Table

PCBs and TCE above PoG SCOs remain in soil below the water table in areas with groundwater impacts. In-situ source treatment below the water table will reduce COC concentrations in soil and groundwater and promote the restoration of groundwater quality. In-situ technologies that have proven effective in treating TCE include in-situ chemical oxidation, enhanced in-situ bioremediation, and in-situ chemical reduction. In-situ treatment of PCBs will focus on reducing PCB mobility, e.g. in-situ stabilization. Treatment technologies will be identified by treatability studies.

Monitored Natural Attenuation

Monitored natural attenuation (MNA) relies on natural processes to "reduce the mass, toxicity, mobility, volume or concentration of" COCs in soil and groundwater. (USEPA, 1999). A MNA program will be implemented as part of the groundwater monitoring program to be included in the SMP. Groundwater monitoring will be performed quarterly for the first two years with the data to be used to assess MNA effectiveness. Groundwater concentrations will be evaluated for continued evidence of attenuation processes, decreasing trends, and stability in accordance with USEPA guidance (USEPA, 1999). Geochemistry including pH, specific conductivity, dissolved oxygen, oxidation-reduction (redox) potential will be monitored for evidence of conditions suitable for transformation of COCs. Transformation of COCs, e.g. TCE, will be identified by detection of daughter products. After two years of quarterly monitoring data have been collected and evaluated, Mann-Kendall tests will be performed for trend analyses (stable, decreasing/increasing). The monitoring frequency will be reduced if MNA effectiveness (stable/decreasing) is demonstrated during the first two years with semi-annual monitoring for the next two years followed by annual monitoring in the fifth year and every five years thereafter until discontinuation of monitoring is approved by NYSDEC.

If after two years, it is determined that MNA will not be effective for improving groundwater quality and limiting migration of COCs in groundwater, a Remediation System Optimization Work Plan will be prepared. The need for any additional investigation or active remediation will be evaluated if requested by NYSDEC.

The removal of source areas during the IRMs reduced ongoing contributions of COC impacts to groundwater quality, allowing the natural attenuation to proceed unimpeded. The operations that contributed to groundwater issues ceased circa 1972 and the migration of the impacted groundwater under Site hydrogeologic conditions in the 50 years since cessation of operations has produced a distribution of COCs that is stable both in magnitude and extent. In addition, as presented in Section 4.4.3, the volume of groundwater passing through the source material over five decades has accounted for multiple rounds of pore volume flushing in the former source area with dilution of the COC concentrations below the water table. Therefore, MNA is anticipated to be effective if conditions at the Site are favorable for continued reduction of COC concentrations.

Groundwater monitoring will be required as part of the SMP to confirm the performance and effectiveness of the remedy, which included the removal of potential sources to groundwater. Groundwater contamination (remaining after active remediation) will be addressed with eight quarters of groundwater sampling and then an assessment to determine if concentrations are

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decreasing, stable, or increasing. The assessment will consider the frequency of monitoring necessary as part of the long-term monitoring program and the need for groundwater remediation. Active remediation or the need for any additional investigation will be evaluated if groundwater contamination shows substantive changes over time, or a request from NYSDEC is made.

Institutional Controls

An in-situ source treatment alternative would require short-term employment of ICs restricting groundwater use and allowance for operation of active treatment. In accordance with Part 375-3.8(e)(1)(iv), short-term ICs would be in place for no more than five years. A groundwater monitoring program will be established to monitor the effectiveness of active treatment and restoration of groundwater quality.

MNA will also require ICs including groundwater use restrictions and the SMP to implement the groundwater monitoring program.

9.3.1.3 Soil Vapor

Soil vapor impacts include VOCs detected beneath the Gymnasium in 2009, the F-Wing in 2014 and the Music Wing in 2018. Sampling of indoor air for VOCs has been conducted as part of post-mitigation monitoring under the ISMP and ISMP Amendment #1 between December 2019 and November 2023. VOCs included on NYSDOH Soil Vapor/Indoor Air Decision Matrices have not been detected above the indoor air guideline values for mitigation under ISMP post-mitigation monitoring.

As evidenced through annual F-Wing effluent stack sampling, a source area is anticipated to be present in the vicinity of Room 127 below the F-Wing. Groundwater north of the F-Wing on Site #c808054 is currently monitored by MW-47 and MW-47I. TCE was non-detect at MW-47 and MW-47I in 2021 and 2024 (**Figure 6-1D** and **6-2D**). Additional investigation and, if necessary, remediation north of the F-Wing will be conducted under Site #c808054.

Sampling of indoor and outdoor air samples for PCBs was conducted in August and December 2021 in accordance with ISMP Amendment #2. Indoor air PCB detections were all at least two orders of magnitude below the USEPA PCB Exposure Level of 0.1 $\mu g/m^3$.

Potential remedial alternatives for soil vapor based on the GRAs presented in Section 9.2.3.3 are as follows.

Source Removal

The nature and extent of COCs in soil beneath the EHS building footprint was not defined during the RI due to access and technical limitations. Demolition of the EHS building would be required to complete soil investigation and identify any sources of soil vapor impacts. Sources above the water table would be removed by excavation prior to construction of new buildings with the EHS building footprint. Sources below the water table would be addressed by in-situ source treatment.

Engineering Controls

SSD Systems have been installed in the Gymnasium, K-Wing Science Addition, Cafeteria and Cafeteria Addition, F-Wing, and Music Wing of EHS to mitigate potential intrusion of soil vapor.

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Under an EC alternative, operation and maintenance (O&M) of the SSD Systems and post-remedial monitoring will continue under the SMP.

Institutional Controls

The EC alternative will require ICs for operating and maintaining the SSDS and the SMP to implement O&M and post-remedial monitoring.

9.3.2 Identification of Remedial Alternatives

Since IRMs have already been completed for the Revised BCP Site, the following remedial alternatives have been developed in accordance with the RAOs, GRAs, and NYSDEC regulation and policy:

- Alternative 1: Unrestricted Use (Track 1) Cleanup.
- Alternative 2: Restricted-Use (Track 4) Cleanup.

Alternative 1 is included to achieve unrestricted use with respect to soil contamination as required for BCP sites when an alternative that will require restricted use is proposed.

9.3.2.1 Alternative 1: Unrestricted Use (Track 1) Cleanup

Alternative 1 consists of unrestricted use (Track 1) cleanup of soils, in-situ source treatment below the water table, source removal of VI sources, and short-term ICs. Soils that contain chemical constituents at concentrations greater than 6 NYCRR Part 375 SCOs for unrestricted use or have evidence of gross contamination would be excavated and transported off-Site for disposal. Achieving these Track 1 remediation goals (Section 4 and Part 4.4 [d][2] of DER-10) obviates the need for ICs and ECs for soil. Achievement of unrestricted use status for the Revised BCP Site would require large-scale, mass excavation.

Due to the nature of the constituents observed in Site soil and the extent to which they exceeded the unrestricted use SCO values, it is likely that a significant portion of the Revised BCP Site defines the impacted soil area. Exceedances of the unrestricted SCOs were observed generally to the water table (14-16 ft bgs); there were limited exceedances observed below the water table. Therefore, this alternative will conservatively assume a depth of impact of 16 ft bgs, which is coincidentally the depth the water table was encountered. Thus, the volume of impacted soil/fill requiring excavation and off-Site disposal is approximately 626,000 cubic yards (est. 1,190,000 tons). Demolition of the EHS building will be required to complete the soil investigation below the building footprint. Conservatively, excavation would be completed to the water table and would include removal of potential VI sources. Potential sources below the water table would be addressed by in-situ source treatment.

As discussed in Section 6, COCs remaining in soil include residual concentrations that have the potential to exhibit the characteristics of toxicity waste. Imported soils were approved for restricted-residential use and may not meet the requirements for unrestricted use presented in Appendix 5 of DER-10. Excavated materials would require handling and preparation for off-Site transportation and disposal at appropriate solid waste disposal facilities. Excavated areas would be backfilled with material meeting the BCP criteria presented in DER-10 and 6 NYCRR Part 375 to

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the pre-excavation elevations and grades, and all disturbed areas would be restored with topsoil and grass seeding, or hardscape if redevelopment activities were approved.

In-situ source treatment below the water table will be implemented at the former slide rail area and AOC-19 in the NAF. Treatability studies will be performed to identify and design the appropriate in-situ technology to address PCBs and VOCs in soil. The selected technology will be implemented as a remedial action followed by post-remedial monitoring under the SMP. Short-term ICs will be established to restrict groundwater use and implement the SMP.

9.3.2.2 Alternative 2: Restricted-Use (Track 4) Cleanup

Alternative 2 consists of a restricted use (Track 4) cleanup of soils, MNA and long-term ICs to restrict groundwater use, and ECs and ICs to mitigate potential VI. The remedy accounts for soil removal and construction of ECs constructed by Unisys and ECSD prior to the BCA and under NYSDEC-approved IRM Work Plan. Soils exceeding IRM action levels were excavated to the water table approximately 16 ft bgs. Under a Track 4 soil cleanup, the top two feet of soils not covered by buildings or pavement would not exceed Restricted Residential SCOs, which is the applicable SCO for high school uses. The EC cover systems constructed during the IRMs and corrective measures including a minimum of two feet of clean soil would remain in place in areas not otherwise covered by impervious (hardscape) cover (e.g., buildings, paved driveways, and parking). Soil below the EC cover systems, building, or pavement would not exceed Site-specific subsurface soil cleanup goals established during the IRMs. No additional soil would need to be excavated beyond the soil removed during the IRMs. Under a Track 4 soil cleanup, potential VI sources would remain under the EHS building. Vapor mitigation ECs including SSD Systems and vapor barriers installed prior to and during the RI would remain in place and continue to operate to mitigate these potential VI sources. Areas outside of the SSD Systems do not require additional VI mitigation (Section 6.1).

As such, Alternative 2 would include the following components:

- ECs constructed during IRMs and prior actions by ECSD and Unisys, including the following:
  - Soil cover systems and impervious/hardscape materials, such as buildings, asphalt driveways and parking lots, concrete walkways, and areas of the FFC including the artificial turf field and the surrounding track.
  - SSD Systems
  - Vapor barriers
- SMP: For any BCP site not remediated to meet NYSDEC Part 375 unrestricted use SCOs (Track 1), preparation of an SMP that describes site-specific ICs and/or ECs is a required component of the final remedy. The existing ISMP will be modified and include the following components: institutional and engineering controls plan (IC/EC Plan), O&M plan, monitoring and sampling plan, periodic assessments, and reporting requirements.

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Environmental Easement: An environmental easement is an IC that imposes land use restrictions and requirements for current and future users. An environmental easement identifies groundwater use restrictions, incorporates the SMP by reference with provisions for future modification, and establishes requirements for periodic certification of ICs and ECs.

The SMP will require a VI assessment prior to construction of new occupied spaces within the Revised BCP Site to determine the need for installation of vapor mitigation as part of the construction. The SMP will include provisions for soil investigation beneath the building footprint when the building or portions of the building are demolished. As evidenced through annual F-Wing effluent stack sampling, a source area is anticipated to be present in the vicinity of Room 127 below the F-Wing. Groundwater north of the F-Wing on Site #c808054 is currently monitored by MW-47 and MW-47I. TCE was non-detect at MW-47 and MW-47I in 2021 and 2024 (**Figure 6-1D** and **6-2D**). Additional investigation and, if necessary, remediation north of the F-Wing will be conducted under Site #c808054.

The removal of source areas during the IRMs reduced ongoing contributions of COC impacts to groundwater quality, allowing the natural attenuation to proceed unimpeded. The operations that contributed to groundwater issues ceased circa 1972 and the migration of the impacted groundwater under Site hydrogeologic conditions in the 50 years since cessation of operations has produced a distribution of COCs that is stable both in magnitude and extent. In addition, as presented in Section 4.4.3, the volume of groundwater passing through the source material over five decades has accounted for multiple rounds of pore volume flushing in the former source area with dilution of the COC concentrations below the water table. Therefore, MNA is anticipated to be effective if conditions at the Site are favorable for continued reduction of COC concentrations.

MNA would be implemented through the long-term groundwater monitoring as part of the SMP. Groundwater monitoring will be performed quarterly for the first two years with the data used to assess MNA effectiveness. Groundwater concentrations will be evaluated for evidence of attenuation processes, decreasing trends, and stability, in accordance with USEPA guidance (USEPA, 1999). Geochemistry will be monitored for evidence of conditions suitable for transformation of COCs. Transformation of COCs, e.g. TCE, will be identified by detection of daughter products. Mann-Kendall tests will be performed for trend analyses. The monitoring frequency will be reduced if MNA effectiveness is demonstrated with semi-annual monitoring for the next two years followed by annual monitoring in the fifth year and every five years thereafter until discontinuation of monitoring is approved by NYSDEC. If COC groundwater concentrations become asymptotic at a level that is not acceptable to NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

MNA relies on natural processes to “reduce the mass, toxicity, mobility, volume or concentration of” COCs in soil and groundwater. (USEPA, 1999). A MNA program will be implemented as part of the groundwater monitoring program to be included in the SMP. Groundwater monitoring will be performed quarterly for the first two years with the data to be used to assess MNA effectiveness. Groundwater concentrations will be evaluated for continued evidence of attenuation processes, decreasing trends, and stability in accordance with USEPA guidance (USEPA, 1999). Geochemistry including pH, specific conductivity, dissolved oxygen, oxidation-reduction (redox)

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potential will be monitored for evidence of conditions suitable for transformation of COCs. Transformation of COCs, e.g. TCE, will be identified by detection of daughter products. After the two years of quarterly data has been received, Mann-Kendall tests will be performed for trend analyses (stable, decreasing/increasing). The monitoring frequency will be reduced if MNA effectiveness (stable/decreasing) is demonstrated during the first two years with semi-annual monitoring for the next two years followed by annual monitoring in the fifth year and every five years thereafter until discontinuation of monitoring is approved by NYSDEC.

If after two years, it is determined that MNA will not be effective for improving groundwater quality and limiting migration of COCs in groundwater, a Remediation System Optimization Work Plan will be prepared.

Groundwater monitoring will be required as part of the SMP to confirm the performance and effectiveness of the remedy, which included the removal of potential sources to groundwater. Groundwater contamination (remaining after active remediation) will be addressed with eight quarters of groundwater sampling and then an assessment to determine if concentrations are decreasing, stable, or increasing. The assessment will consider the frequency of monitoring necessary as part of the long-term monitoring program and the need for groundwater remediation. Active remediation or the need for any additional investigation will be evaluated if groundwater contamination shows substantive changes over time, or a request from NYSDEC is made.

9.4 Analysis of Alternatives

NYSDEC's BCP calls for remedy evaluation in accordance with DER-10 (NYSDEC, 2010). In addition to achieving RAOs, the remedial alternatives are evaluated against the following criteria consistent with 6 NYCRR Part 375-1.8(f):

- **Overall Protectiveness of Public Health and the Environment**. This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, ECs, or ICs.
- **Compliance with SCGs**. Compliance with SCGs addressed whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.
- **Long-Term Effectiveness and Permanence**. This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-Site after the selected remedy has been implemented, the following items are evaluated: (1) the magnitude of the remaining risks (i.e., will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals), (2) the adequacy of the ECs and ICs intended to limit the risk, (3) the reliability of these controls, and (4) the ability of the remedy to continue to meet RAOs in the future.
- **Reduction of Toxicity, Mobility, or Volume of Contamination Through Treatment**. This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that

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permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Revised BCP Site.

- **Short-Term Impacts and Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. This includes a discussion of how the identified adverse impacts and health risks to the community or workers at the Revised BCP Site will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of ECs that might be used to mitigate short term impacts (e.g., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives.
- **Implementability**. The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, and the like.
- **Cost-Effectiveness**. Capital, operation, maintenance, and monitoring costs are estimated for each remedial alternative and presented on a present worth basis. The estimated soil areas and volumes presented are estimates of the maximum in-place extent of impacted soil.
- **Community Acceptance**. This criterion evaluates the public's comments, concerns, and overall perception of the remedy. The Community Acceptance criterion incorporates public concerns into the evaluation of the remedial alternatives. Therefore, community acceptance of the remedy will be evaluated after the public review of the remedy selection process as part of the final NYSDEC remedy selection/approval.
- **Green and Sustainable Remediation**. Green and sustainable remediation (GSR) integrates environmental best management practices, project planning, climate resiliency, and tracking metrics and footprint analysis into site cleanup processes in order to sustainably remediate contaminated sites. The goals of green remediation strategies are to reduce total energy use and increase the percentage of energy from renewable resources; reduce air pollutants and greenhouse gas emissions; reduce water use and preserve water quality; conserve material and reduce waste; and protect land and ecosystems.
- **Land Use**. In addition to the above criteria, 6 NYCRR Part 375-1 specifies that the criterion of Land Use (i.e., the current, intended, and reasonably anticipated future land uses of the Site and its surroundings) be considered in the selection of the remedy. The reasonably anticipated future use of the Site, as initially submitted to the NYSDEC via the BCP application, is in a restricted residential capacity.

9.4.1 Alternative 1: Unrestricted Use (Track 1) Cleanup

9.4.1.1 Overall Protectiveness of Public Health and the Environment

Excavation and off-Site disposal to unrestricted use SCOs would be protective of public health under any reuse scenario. However, this alternative would permanently use and displace

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approximately 626,000 cubic yards of valuable landfill airspace, causing ancillary environmental issues due to reduced landfill capacity, and would require excavating, transporting, and placing 688,600 cubic yards of clean soil from an off-Site borrow source to backfill the excavation, also contributing to significant detrimental off-Site environmental issues.

Track 1 soil cleanup would produce significant carbon emissions. Excavation work would require the estimated removal of approximately 60,000 truckloads of soil/fill and import of approximately 65,750 truckloads of clean loads from the borrow source. Transport of soil would result in estimated diesel fuel consumption on the order of 1,275,000 gallons (assuming 170 miles round trip to a local landfill; 8 miles per gallon [distance to the nearest TSCA PCB landfill is even further at nearly 1,000 miles round trip]), with several thousands of gallons also consumed by excavation and grading equipment. The USEPA and U.S. Department of Transportation estimated carbon dioxide generation rate for diesel engines is 10,180 grams (approximately 22.44 pounds) per gallon of diesel consumed (Federal Register, 2010). Accordingly, this alternative would produce over 28 million pounds of greenhouse gas.

In-situ source treatment below the water table will improve groundwater quality and limit migration of COCs in groundwater.

Removal of potential VI sources beneath the building footprint will eliminate the migration of COCs in soil vapor from those sources and allow building construction without vapor mitigation ECs.

9.4.1.2 Compliance with SCGs

Similar to the IRM soil removal activities, the additional excavation and off-Site disposal would need to be performed in accordance with applicable, relevant, and appropriate SCGs. Soil excavation activities would necessitate preparation of and adherence to a community air monitoring plan in accordance with Appendices 1A and 1B of DER-10.

In-situ source treatment below the water table will promote the restoration of groundwater quality to comply with groundwater standards.

9.4.1.3 Long-Term Effectiveness and Permanence

This alternative would remove all impacted soil to the water table, potentially improve groundwater quality, reduce mobility of COCs in groundwater and eliminate potential VI sources and therefore provide long-term effectiveness and permanence.

9.4.1.4 Reduction of Toxicity, Mobility, or Volume of Contamination Through Treatment

Through removal of all impacted soil to the water table, this alternative would permanently and significantly reduce the toxicity, mobility, and volume of contamination on the Revised BCP Site. However, since this alternative transfers Site soil from one environment to another, an overall reduction of toxicity and volume would not occur, although mobility of soluble constituents would be reduced in a commercial landfill with a liner, leachate collection, and a cover system.

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In-situ source treatment below the water table will reduce the toxicity and volume of contamination in soils below the water table and will reduce the mobility in the soil to groundwater pathway. In-situ treatment will likewise reduce the toxicity and mobility of contaminants in groundwater.

9.4.1.5 Short-Term Impacts and Effectiveness

The short-term adverse impacts and risks to the community, workers, and environment during implementation of this alternative are significant. Site workers would be at greater risk of injury due to the depth of the excavation and increased use of heavy equipment. Other physical hazards, primarily related to potential accidents from heavy truck traffic, would be expected as the excavation work would require removal of approximately 60,000 truckloads of soil/fill and import of approximately 65,750 truckloads of clean loads from the borrow source. Dust control methods would be required to limit the release of particulates during excavation and placement of the backfill soils. Substantial disruption of the neighboring community would occur due to material transport and deliveries and noise from heavy equipment used to construct the remedy. This action would result in stormwater impacts at the borrow source(s) and on-Site. Diesel fuel consumption on the order of at least 1,275,000 gallons (Section 9.4.1.1) would produce over 28 million pounds of greenhouse gas.

This alternative would present significant disruptions and major impacts to the EHS community, including the short-term loss of use of an important school facility. Track 1 cleanup would require removal of the following newly constructed athletic facilities and parking areas, which were just recently the subject of major capital improvement projects by the ECSD:

- Tennis Courts (2017)
- Main Parking Lot (2017)
- Rear Parking Lot (2018)
- FFC (2021–22)
- NAF Shot Put and Discus Area (2022)
- NAF Parking Lot (2023)
- NAF baseball, softball and practice fields (2023–2024)

Excavation and potential VI source removal beneath the EHS building footprint will require demolition of the EHS building, resulting in further disruption to the EHS community. ECSD would need to find an alternative location for instruction during demolition and reconstruction.

9.4.1.6 Implementability

Significant technical and administrative implementability issues would be encountered in construction of this unrestricted use alternative. Technical implementability issues may include, but are not limited to, shoring/stabilizing excavation sidewalls to prevent sloughing during excavation, removal of historic concrete foundations, and traffic coordination for trucks entering and exiting the Revised BCP Site. Administrative implementability issues may include the need to coordinate and secure disposal contracts with numerous permitted off-Site landfills, as no single

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location would be able to accept the volume of soil/fill generated under this alternative, and difficulty locating local borrow sources for such a large volume of backfill.

9.4.1.7 Cost-Effectiveness

The capital cost of Alternative 1 is estimated at $508 million, including remedial construction, development of a Final Engineering Report (FER) and SMP. Remedial construction costs do not include costs for restoration of EHS parking lots, stadium, athletic fields and tennis courts that were constructed following the completion IRMs between 2017 and 2024. The restoration of EHS parking lots, stadium, athletic fields and tennis courts is estimated at $25 million. Replacement of the EHS building is estimated at $150 million. Annual operation, maintenance, and monitoring (OM&M) costs for groundwater monitoring and annual certifications are estimated to be $311,000 in Years 1 and 2, $171,000 in Years 3 and 4, and $101,000 in Year 5 during the period of short-term ICs to restrict groundwater use and implement the SMP. Therefore, the present worth of the remedial cost to implement and restore Alternative 1 is estimated at $508 million. **Table 9-1** provides a breakdown of these remedial costs.

9.4.1.8 Community Acceptance

This alternative would result in significant disruptions to the neighboring community due to material transport and deliveries and noise from heavy equipment during construction. Moreover, this alternative would result in significant disruptions to the high school and the surrounding community due to short-term loss of major facilities, following a period where ECSD already faced disruptions during implementation of the IRMs at the Site. A Track 1 soil cleanup would result in the short-term removal and loss of use of the high school building and recently constructed major capital improvements:

- Tennis Courts replaced following IRM #1 in Summer 2017
- Staff/student parking lot (Main Parking Lot) replaced during construction of the IRM #1 in Summer 2017 and used for IRM #3 in Summer 2019
- Rear Parking Lot replaced during IRM #2 in Summer 2018
- The FFC, including playing field, track, and grandstands replaced and improved between June 2020 and September 2022 during construction of IRM #4, IRM #4A, IRM #5, and IRM #5A3
- Baseball, softball, soccer fields, and shot put and discus area replaced and improved as part of EHS stadium and NAF improvements between November 2022 and July 2024 following IRM #5A2, with use for temporary infrastructure during construction of IRM #4, IRM #4A, IRM #5 and IRM #5A2 between June 2020 and February 2023

The timeframe for remedial construction and restoration of school facilities is anticipated to be five to seven years. Because the community has already experienced the loss of facilities like athletic facilities, parking lots, and grandstands during IRMs between 2017 and 2024 and since these facilities have only recently been restored (in many cases with major improvements of which the community is proud), renewed loss of these facilities and the high school building is likely to be viewed negatively by the community.

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9.4.1.9 Green and Sustainable Remediation

Excavation work would require removal of approximately 60,000 truckloads of soil/fill and import of approximately 65,750 truckloads of clean loads from the borrow source. Diesel fuel consumption on the order of at least 1,275,000 gallons (Section 9.4.1.1) would produce over 28 million pounds of greenhouse gas. Climate impacts may be mitigated through the use of more energy-efficient vehicles.

9.4.1.10 Land Use

The timeframe for remedial construction and restoration is anticipated to be five to seven years. This alternative would eliminate the current use of the Revised BCP Site as a high school with associated athletic facilities and parking areas during construction. Upon completion, there would be no restrictions on future development.

9.4.2 Alternative 2: Restricted-Use (Track 4) Cleanup

9.4.2.1 Overall Protectiveness of Public Health and the Environment

This alternative meets NYSDEC requirements for a Track 4 cleanup under the BCP regulations and is protective of public health and the environment. The RAOs for the Revised BCP Site would be satisfied through the completed and planned remedial activities, including removal and off-Site disposal of soil; placement, maintenance, and monitoring of multiple SSD Systems beneath the school building floor slab to mitigate potential on-Site VOC VI concerns; installation and maintenance of cover systems (soil and impervious) across the Revised BCP Site; and the use of IC/ECs to prevent potential future exposure and limit the future Site use of the Revised BCP Site to restricted-residential.

9.4.2.2 Compliance with SCGs

The remedial activities completed under the IRMs were performed in accordance with applicable, relevant, and appropriate SCGs. The completed IRMs are fully protective of public health and the environment and achieve all RAOs for the Revised BCP Site. Imported cover material meets backfill quality criteria per DER-10 and 6 NYCRR Part 375 for current and future land use, with the exceptions noted for the SCV sampling of imported topsoil and structural fill in the FFC which detected arsenic and select SVOCs above Restricted Residential SCOs between 0.17 and 2 ft bgs in the northern, western and eastern portions of the FFC. Those exceedances are sporadic, spatially limited and bounded, and are associated with materials imported to the Site from borrowed sources. Details are provided in **Appendix Q.**

Future intrusive work below the EC cover systems will be performed in accordance with applicable, relevant, and appropriate SCGs through implementation of the IC/EC Plan under the SMP.

9.4.2.3 Long-Term Effectiveness and Permanence

Soil removal and construction and maintenance of a cover system that have been completed as part of IRMs and corrective measures, if needed, will prevent direct contact with soil exceeding the Restricted Residential SCO. Periodic inspection and maintenance of the soil cover as well as the hardscape cover (e.g., asphalt roads, concrete walkways, and parking areas) will be required to assure long-term cover integrity. O&M of existing SSD Systems will mitigate potential on-Site

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VOC VI concerns. Proposed new buildings that are to be regularly occupied will be subject to a soil vapor intrusion evaluation in accordance with the final SMP. The SMP will include: an O&M Plan to confirm that ECs, including the cover systems and SSD Systems, are operating and being maintained; an Excavation Work Plan to address any impacted soil encountered during post-development maintenance, repair, or construction activities; a Site-wide inspection program to assure that the ICs/ECs placed on the Revised BCP Site have not been altered and remain effective, and a Monitoring and Sampling Plan to evaluate overall performance and effectiveness of the remedy. Furthermore, an environmental easement for the Revised BCP Site will be filed with Chemung County, which will limit the future use of the Revised BCP Site to restricted-residential use, restrict groundwater use, and reference the NYSDEC-approved SMP. As such, this alternative will provide long-term effectiveness and permanence.

9.4.2.4 Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment

Removal of soil and placement of cover systems have permanently and significantly reduced the toxicity, mobility, and volume of the soil that could potentially be contacted or produce localized areas of environmental impact at the Revised BCP Site.

PCBs and VOCs remain in place in soils below the water table and in groundwater at the former slide rail area and AOC19. The mobility of PCBs through leaching from soil to groundwater is low due to their high affinity to the organic content in soil. VOC concentrations are expected to decrease over time through abiotic processes and biodegradation. The reduction of toxicity, mobility and volume over time will be assessed by the MNA evaluation to be implemented as part of the SMP. If the reduction of groundwater contamination is not acceptable to NYSDEC at the conclusion of the evaluation, additional source removal, treatment and/or control measures will be evaluated.

The nature and extent of contamination beneath the EHS building footprint is unknown and will be defined by future soil investigation when the building or portion of the building are demolished. Potential source areas will be removed by excavation under the SMP. Groundwater VOC concentrations in all seven monitoring wells located within 20 feet east (i.e., downgradient) of the EHS building have remained consistently below TOGS standards (MW-13, MW-85I, MW-88S/I, and MW-89S/I) or have exhibited decreasing trends over time (MW-12). On the basis of this data, it is unlikely that sufficient VOC source material is present beneath the EHS building, which is upgradient of these monitoring wells, to result in increasing groundwater VOC concentrations over time. As evidence through annual F-Wing effluent stack sampling, a source area is anticipated to be present in the vicinity of Room 127 below the F-Wing. Groundwater north of the F-Wing on Site #c808054 is currently monitored by MW-47 and MW-47I. TCE was non-detect at MW-47 and MW-47I in 2021 and 2024 (**Figure 6-1D** and **6-2D**). Additional investigation and, if necessary, remediation north of the F-Wing will be conducted under Site #c808054.

9.4.2.5 Short-Term Impacts and Effectiveness

Short-term impacts associated with Alternative 2 are minor since soil removal and cover system construction have been completed in accordance with the approved IRM Work Plans. During intrusive remedial activities including placement of cover systems, air monitoring was performed to demonstrate and document conformance with community air monitoring action levels. The

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potential for chemical exposures and physical injuries during future intrusive work below the cover systems will be reduced through implementation of the SMP, including safe work practices; proper personal protection equipment; environmental monitoring; establishment of work zones and Site control; and appropriate decontamination procedures.

Soil investigation and potential source removal beneath the EHS building footprint will be coordinated with future demolition and improvements of the EHS building to minimize disruption of school operations.

9.4.2.6 Implementability

No significant technical or administrative implementability issues are associated with this alternative. Soil investigation and potential source removal beneath the EHS building, if any, footprint will be managed under the SMP.

9.4.2.7 Cost-Effectiveness

The estimated capital cost for Alternative 2 is $240,000, for development of an FER and SMP. Annual OM&M costs for long-term groundwater monitoring, VI monitoring, cover and SSD System maintenance, and annual certifications are estimated to be $348,000 in years one and two, $226,000 in years three and four and $104,000 in years five to 30. SSD fan replacement will be required every 10 years at a cost of $30,000. Therefore, the 30-year present worth of the remedial cost to implement Alternative 2 is estimated at $3.21 million. **Table 9-2** provides a breakdown of these remedial costs.

9.4.2.8 Community Acceptance

Community acceptance will be evaluated based on comments to be received from the public in response to the newsletter and other citizen participation activities. Based on the acceptance of the IRMs by the community as monitored through distribution of NYSDEC newsletters and public availability sessions, Alternative 2 appears likely to be accepted by the community.

9.4.2.9 Green and Sustainable Remediation

Alternative 2 will require no additional excavation and off-Site transport and disposal or importation of fill material since soil removal and cover system construction have been completed in accordance with the approved IRM Work Plans. Therefore, there will be no additional truck trips requiring diesel fuel consumption.

Consistent with post-remedy operation, maintenance, monitoring optimization provisions set forth in ASTM International (ASTM) E2893 – Industry Standards for Greener Cleanups, GSR measures will focus on minimizing the environmental footprint of long-term Site management while maintaining remedy protectiveness. Measures to be considered include:

- Maintaining and periodically evaluating the energy efficiency of vapor mitigation systems, including the use of high-efficiency equipment or renewable electricity where practicable;
- Coordinating inspections and sampling activities to reduce mobilizations, vehicle travel, fuel consumption, and associated emissions;

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- Using electronic field records, reporting, and data management to reduce paper and material consumption;
- Maintaining engineered soil and hardscape cover systems to extend their service life and minimize repair related waste and disturbance;
- Preserving established vegetation, using native or low-maintenance plantings and minimizing irrigation and erosion;
- Maintaining stormwater controls and the infiltration gallery to protect water quality and preserve natural drainage functions;
- Evaluating climate resilience, including the effects of extreme precipitation, flooding, heat, and changing groundwater conditions on remedy performance; and
- Tracking energy use, fuel consumption, travel, water use, waste generation, and material use during operation, maintenance, and monitoring to support periodic remedy optimization.

9.4.2.10 Land Use

Use of the Site in a restricted-residential capacity is consistent with past and current development and zoning on-Site and within the vicinity of the Site and does not pose additional environmental or public health risks.

9.4.2.11 Future Building Demolition

If existing Site buildings are demolished or currently inaccessible areas become accessible, investigation and, as warranted by the investigation results, remediation will be performed in accordance with the final SMP. The final SMP will establish requirements for evaluating and managing potentially impacted environmental media encountered during demolition, excavation, or other activities that provide access to previously inaccessible areas.

9.5 Comparison of Remedial Alternatives

The previous sections describe and evaluate the remedial alternatives for the Site against the screening criteria. **Table 9-3** provides a comparison of the alternatives to identify appropriate remedial measures that will achieve the RAOs for the Site.

9.5.1 Overall Protectiveness of Public Health and the Environment

Alternative 1 and Alternative 2 provide similar overall protectiveness of public health and the environment. Both alternatives meet NYSDEC requirements for cleanup under the BCP regulations and are protective of public health and the environment.

9.5.2 Compliance with SCGs

Both Alternative 1 and Alternative 2 will be compliant with SCGs.

9.5.3 Long-Term Effectiveness and Permanence

Alternative 1 and Alternative 2 each provide long-term effectiveness and permanence.

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9.5.4 Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment

Alternative 1 and Alternative 2 use similar means to achieve reduction of toxicity and mobility of contamination through soil removal. Soil removal has been completed for Alternative 2 through IRMs and corrective measures. Alternative 1 provides reduction of toxicity, mobility and volume of contamination in soil below the water table and in groundwater. Alternative 1 will remove potential VI sources beneath the EHS building that are mitigated by ECs under Alternative 2.

9.5.5 Short-Term Impacts and Effectiveness

Alternative 1 would result in significant adverse impacts in the short term (multiple years) during construction, including large-scale transport of soil to and from the Revised BCP Site, resulting in significant disruptions to the surrounding community, loss of the high school, and the loss of use of recently constructed and improved major facilities and community amenities including sports fields and parking areas. The short-term impacts associated with Alternative 2 are minor compared to the significant short-term adverse impacts and risks to the community, workers, and environment under Alternative 1.

9.5.6 Implementability

Alternative 1 would encounter technical and administrative issues during implementation that would not be encountered during implementation of Alternative 2. Removal of historic concrete foundations will increase the technical complexity of the Alternative 1 remedial design. Administratively, Alternative 1 would require coordination of truck traffic for off-Site transport and disposal and identification of receiving facilities and borrow sources. Alternative 2 is readily implementable using standard approaches to ECs and ICs.

9.5.7 Cost-Effectiveness

Alternative 2 is the cost-effective option as presented in **Table 9-3**. Alternative 2 with a cost of $3.2 million would be $505 million less than Alternative 1 with a cost of $508 million.

9.5.8 Community Acceptance

Alternative 1 would result in significant disruptions to the high school and the surrounding community, which recently faced disruptions during implementation of the IRMs at the Revised BCP Site. The community may question the need for the additional disruptions necessary under a Track 1 cleanup approach when IRMs were presented to be the final remedy, with both alternatives being protective of human health and the environment. Community participation in the implementation of the IRMs has been achieved through distribution of NYSDEC newsletters and public availability sessions.

9.5.9 Green and Sustainable Remediation

Alternative 1 will have increased climate impact compared to Alternative 2 due to the large-scale transport of soil to and from the Revised BCP Site. GSR principles and techniques will be considered in the implementation of the SMP.

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9.5.10 Land Use

Both Alternative 1 and Alternative 2 will allow the future land use of the Revised BCP Site as a high school. Alternative 2 allows undisrupted use of the school and the newly constructed and improved facilities. In contrast, Alternative 1 will disrupt the current use of the Revised BCP Site as a high school with associated athletic facilities and parking areas but would allow unrestricted use upon completion.

9.6 Preferred Remedial Alternative

The proposed remedial approach for the Site is Alternative 2: Restricted-Use (Track 4) Cleanup because it is fully protective of public health and the environment; is significantly less disruptive to the community; is consistent with current and future land use; and represents a more cost-effective approach than Alternative 1 while fully satisfying the RAOs for the Revised BCP Site. With its use of a cover system, SSD Systems and implementation of an SMP, Alternative 2 provides the same overall protectiveness as Alternative 1. Alternative 2 would constitute the final remedy for the Revised BCP Site.

In summary, Alternative 2 would involve the following:

- Maintenance of cover systems will be performed, including a demarcation layer and at least two feet of approved cover material or impervious materials such as asphalt driveways and parking lots, and concrete building foundations, slabs, or walkways. Approved soil cover material meets NYSDEC DER-10 standards for restricted-residential sites. Hardscape material outside of the building footprint will be at least 6 inches thick including subbase material.
- Operation and monitoring of SSD Systems and vapor barriers beneath the building footprint will be performed.
- MNA of groundwater. A MNA program will be implemented as part of the groundwater monitoring program to be included in the SMP. Groundwater monitoring will be required as part of the SMP to confirm the performance and effectiveness of the remedy, which included the removal of potential sources to groundwater. Groundwater contamination (remaining after active remediation) will be addressed with eight quarters of groundwater sampling and then an assessment to determine if concentrations are decreasing, stable, or increasing. The assessment will consider the frequency of monitoring necessary as part of the long-term monitoring program and the need for groundwater remediation. Active remediation or the need for any additional investigation will be evaluated if groundwater contamination shows substantive changes over time, or a request from NYSDEC is made
- An SMP will be implemented that will include the following:
  - IC/EC Plan that describes ICs and ECs. ECs include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. ICs at the Site will include restrictions on groundwater use and Site use to restricted-residential.

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  - Proposed new buildings that are to be regularly occupied will be subject to a soil vapor intrusion evaluation.
  - Provisions for additional investigation, and if necessary, remediation, beneath the EHS Building if the building or portions of the building are demolished or areas otherwise become accessible.
  - O&M Plan to confirm that ECs, including the cover systems and SSD Systems, are operating and being maintained.
  - Excavation Work Plan to ensure that future intrusive activities and soil handling at the Revised BCP Site are completed in a safe and environmentally responsible manner.
  - Monitoring and Sampling Plan that includes provisions for a Site-wide inspection program to assure that the ICs/ECs have not been altered and remain effective and monitoring and sampling to evaluate MNA and the effectiveness of vapor mitigation.
- An environmental easement will be filed with Chemung County.

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10. POST-REMEDIAL REQUIREMENTS

10.1 Final Engineering Report

Following completion of the remedial measures, an FER will be submitted to the NYSDEC. The FER will include the following information and documentation, consistent with the NYSDEC regulations contained in 6 NYCRR Part 375-1.6(c):

- Background, Site description, and Site boundaries
- Summary of the Site remedial activities that satisfied the RAOs for the Revised BCP Site
- Description of ECs and ICs at the Revised BCP Site
- Certification by a professional engineer to satisfy the requirements outlined in 6 NYCRR Part 375-1.6(c)(4)

10.2 Site Management Plan

The existing ISMP covering the Revised BCP Site will be updated and submitted concurrent with the FER. The purpose of the SMP is to assure that proper procedures are in place to provide for long-term protection of public health and the environment after remedial construction is complete. The SMP will comprise four main components:

- IC/EC Plan
- Monitoring and Sampling Plan
- O&M Plan
- Reporting Requirements

10.2.1 Institutional and Engineering Controls Plan

As discussed in Section 3, EC soil cover systems were constructed during each IRM to limit exposure to COC concentrations above Restricted Residential SCOs. Additionally, ECs in the form of SSD Systems have been installed in the K-Wing, Gymnasium, Cafeteria and Cafeteria Addition, F-Wing, and Music Wing at EHS to mitigate the VI potential at the Revised BCP Site (Sections 2.1 and 3.1). Proposed new buildings that are to be regularly occupied will be subject to a soil vapor intrusion evaluation in accordance with the final SMP. The final SMP will include provisions for additional investigation beneath the EHS Building if the building or portions of the building are demolished or areas otherwise become accessible.

An IC in the form of a new environmental easement will be necessary to limit future use of the Site to restricted-residential applications and prevent groundwater use for potable purposes. The IC/EC Plan will include a complete description of all ICs and/or ECs employed at the Revised BCP Site, including the mechanisms that will be used to continually implement, maintain, monitor, and enforce such controls.

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The IC/EC Plan will include the following:

- A description of all ICs/ECs on the Revised BCP Site
- The basic implementation and intended role of each IC and EC
- A description of the key components of the ICs set forth in the environmental easement
- A description of the features to be evaluated during each required inspection and periodic review, including the IC/EC certification, reporting, and Site monitoring
- Any other provisions necessary to identify or establish methods for implementing the ICs/ECs required by the Site remedy, as determined by the NYSDEC

10.2.2 Monitoring and Sampling Plan

The Monitoring and Sampling Plan will describe measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, including the following:

- Site-wide inspections
- Remedial system monitoring
- Sampling and analysis of all appropriate media
  - Remedial sampling of SSD effluent
  - Post-remedial monitoring of indoor air
  - Post-remedial monitoring of groundwater
- Assessing compliance with applicable NYSDEC SCGs
- Assessing achievement of the RAOs
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment
- Preparing the necessary reports for the various monitoring activities

To adequately address these issues, this Monitoring and Sampling Plan will provide information on the following:

- Annual inspection and periodic certification
- Sampling locations, protocol, and frequency
- Information on all designed monitoring systems
- Analytical sampling program requirements
- Reporting requirements
- Quality assurance / quality control (QA/QC) requirements
- Monitoring well decommissioning procedures

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The frequency of post-remedial groundwater monitoring as well as types of analyses to assess overall reduction in contamination on-Site and off-Site will also be included in the Monitoring and Sampling Plan.

10.2.3 Operation and Maintenance Plan

An O&M Plan governing maintenance of the cover systems and the SSD Systems will include the following:

- O&M activities necessary to allow individuals unfamiliar with the Revised BCP Site to maintain the cover systems and/or the SSD Systems
- O&M contingency plans

Site information will be evaluated periodically to confirm that the remedy continues to be effective for the protection of public health and the environment. If necessary, the O&M Plan will be updated to reflect changes in Site conditions or the manner in which the cover systems or SSD Systems are maintained.

10.2.4 Reporting and Certifications

10.2.4.1 Reporting

A PRR will be submitted to the NYSDEC annually, or as otherwise approved, beginning 15 months after the Certificate of Completion or equivalent document is issued. The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. The PRR will include the following:

- Identification, assessment, and certification of all ICs/ECs required by the remedy for the Revised BCP Site
- Results of the required annual Site inspections and severe condition inspections, if applicable
- All applicable inspection forms and other records generated for the Revised BCP Site during the reporting period in electronic format
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions
- Summary tables and graphical representations of COCs by media for data collected during the reporting period, which will include a list of all compounds analyzed, along with the applicable standards, with exceedances (if any) highlighted
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period, which will be submitted electronically in an NYSDEC-approved format
- A Site evaluation that includes the following:
  - The compliance of the remedy with the requirements of the site-specific decision document

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- The operation and the effectiveness of all treatment units (if any) including identification of any needed repairs or modifications
- Any new conclusions or observations regarding Site contamination based on inspections or data generated by the SMP for the media being monitored
- Recommendations regarding any necessary changes to the remedy or SMP
- The overall performance and effectiveness of the remedy

10.2.4.2 Certification

The signed IC/EC certification will be included in the PRR. For each IC or EC identified for the Revised BCP Site, a Professional Engineer licensed to practice in New York State will certify that all of the following statements are true:

- The inspection of the Revised BCP Site to confirm the effectiveness of the ICs and ECs required by the remedial program was performed under the Professional Engineer's direction.
- The ICs and ECs employed at this Site are unchanged from the date the control was put in place or last approved by NYSDEC.
- Nothing has occurred that would impair the ability of the control to protect the public health and environment.
- Nothing has occurred that would constitute a violation or failure to comply with any SMP for this control.
- Access to the Revised BCP Site will continue to be provided to NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.
- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document.
- Use of the Revised BCP Site is compliant with the environmental easement.
- The EC systems are performing as designed and are effective.
- To the best of the Professional Engineer's knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Revised BCP Site remedial program and generally accepted engineering practices.
- The information presented in this report is accurate and complete.

10.2.4.3 Corrective Measures Plan

If any component of the remedy is found to have failed or if the periodic certification cannot be provided due to the failure of an IC or EC, a corrective measures plan will be submitted to NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by NYSDEC.

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