SEABOARD GROUP II AND THE CITY OF HIGH POINT

July 18, 2023

Eric B. Aufderhaar, P.G., Environmental Program Consultant
North Carolina Department of Environmental Quality
Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Re: Five-Year Review Report - Response to Comments
Former Seaboard Chemical and Riverdale Drive Landfill Site
Jamestown, Guilford County, North Carolina

Dear Mr. Aufderhaar:

In response to correspondence from NCDEQ dated May 26, 2023, please find summarized below responses related to the review comments on the Five-Year Review Report. A revised *Five-Year Review Report* is attached to this correspondence as requested.

Comment 1: Section I (Page 3), *Site Background* and other sections. Property lines should be displayed on a figure, either the Site Feature Map (Figure 2) or an additional figure. At a minimum, reference the figure with property lines in the *Site Background* section, *Site Related* portion of Section II (page 6) and *Treatment System* portion of Section II (page 7).

Response: Property lines have been added to Figure 2 which is included with the revised Five-Year Review Report.

Comment 2: Section I (Page 4), second full paragraph. The text indicates "…the parties then entered into an Administrative Order on Consent (AOC) dated January 30,1996 with the State to perform the Remedial Investigation (RI)." Please clarify which parties completed the RI - due to limited staffing and economic resources the DEQ rarely completes assessment activities for regulated responsible parties. Instead, DEQ reviews workplans, provides guidance when applicable and reviews reports.

Response: The "Parties", as discussed in the referenced paragraph, refers to the Seaboard Group II and the City of High Point. Language has been added to the referenced section to clarify the author of the RI.

Comment 3: Section II (Page 6), *Site Related* section. Add "locked gates" after fencing. Please clarify if security cameras are in use by the Materials Recycling Facility (MRF) or in the area of the mechanical treatment system controls.

Response: The words "locked gates" have been added after fencing in the "Site Related" section of the revised Five-Year Review Report. There are no operational cameras at the site.

Comment 4: Several acronyms used in the report are not defined when first used or included on the acronyms list. These include "SCADA" in *Treatment Systems* (Section II, page 7) and AOP+ in *Status of Implementation* (Section II, page 9).

Response: The acronyms "SCADA" and "AOP+" have been spelled out in the text and added to the acronym list in the revised Five-Year Review Report document.

Comment 5: Section II (Page 8), *Natural Treatment System* section and Figure 2, *Site Features Map*. The text refers to tree stands but not "phytoremediation" which would tie the discussion with Figure 2 more effectively. We suggest adding "phytoremediation" in the sentence: "an irrigation system for the tree stand is divided into 16 approximately two-acre *phytoremediation* zones". In addition, add "West Lobe" and "East Lobe" to Figure 2.

Response: These comments have been addressed in the revised Five-Year Review Report document.

Comment 6: Section II (Page 9) fourth bullet. A short discussion of the AOP+ system and why it was determined to not be effective should be included in the revised report.

Response: A brief description of the decommissioning of the AOP+ system has been added to the revised Five-Year Review Report. Note for reference the full description is provided with Technical Memorandum E10.

Comment 7: Section IV (Page 12), *Five-Year Review Process*. The Soil Residue Mound is mentioned in the third paragraph. Mention in the text when the synthetic liner and overlying soil were installed over the mound.

Response: The date of the synthetic liner installation (May/June 2010) has been added to the referenced text in the revised Five-Year Review Report.

Comment 8: Section IV (Page 12), *Five-Year Review Process* and Figure 5, *1,4-Dioxane Trend Graphs*. Monitoring well MW-15A near the Soil Residue Mound is stated elsewhere in the report as outside the radius of influence for the remedy. The graph for 1,4-dioxane indicates that the concentration has reduced over time; however, it is about 1,000 ug/L – several orders of magnitude greater than the North Carolina Groundwater Quality Standard of 3 ug/L. The remediating parties should consider an alternative remedial approach to reduce the 1,4-dioxane concentrations in groundwater more quickly.

Response: The Soil Residue Mound (SRM) was closed in-place by grading the surface of the mound and placing a synthetic cap over the top to eliminate exposure and eliminate rainfall infiltration. There is no liner beneath the SRM. It was anticipated that these actions would reduce groundwater contaminant concentrations downgradient of the SRM. As the approved remedy for the Site is containment of

contaminated groundwater and protection of surface water, active remediation of this source area was not a part of the approved remedy. The statement "outside the radius of influence" was intended to note that no extraction wells are located immediately downslope of the SRM. Groundwater flow from the SRM enters the SIS drainage valley where it is captured by the shallow SIS extraction wells (RW-SIS 2/3/4).

Comment 9: Section IV (Pages 14 and 15), *Surface Water 1,4-Dioxane Data*. The table on pages 14-15 and the related text on page 15 indicates that the increased 1,4-dioxane concentrations at SW-2 is related to above average rainfall and runoff from the phytoremediation zone at the time of sample collection. Describe the rainfall amounts as measured at an onsite or local rainfall gauge associated with the sampling dates. Include evidence of erosion or seep(s) on the slope in the phytoremediation zone above the SW-2 location. Finally, determine if there are other sources for 1,4-dioxane near the SW-2 location.

Response: Surface water monitoring station SW-2 is normally dry as noted on the surface water analytical summary table on page 15. The sample collected on November 7, 2018 occurred after a 0.92 inch rainfall on November 5/6/7, 2018. The sample collected on October 19, 2022 occurred after a 0.64 inch rainfall on October 17/18, 2022.

There is no evidence of erosion or seeps from the phytoremediation zones. The contaminant source is likely from overland flow of rainfall as observed during sample collection. Also, there are no know sources of 1,4-dioxane upgradient of the phytoremediation zones as the area is primarily residential.

Comment 10: Section IV (Page 15), *Surface Water 1,4-Dioxane Data*. In the third paragraph, a sentence notes that "…at least two known sources of 1,4-dioxane in surface water are located on Richland Creek upstream of this confluence." Identify these known sources by name and when 1,4-dioxane was determined to be associated with the sources. This information should also be included in the text below the "Monitoring" issue category box (Section VI) on Page 28.

Response: The two know sources of 1,4-dioxane upstream of surface water monitoring station SW-DRP11 are:

Waste Industries of High Point C&D Landfill: Permit No. 41-16
Former Jackson Lake Road Landfill: Permit No. NONCD0000820

The NC Solid Waste Section is aware of these sources as groundwater/surface water assessments have been conducted. Note that the former Jackson Lake Road Landfill site is regulated under the Pre-Regulatory Landfill Program.

Comment 11: Section IV (Page 19), *Operational Data*. On the Flow Comparison Chart, change the "Phyto Disch" curve legend text to "Discharge to Phyto". This change will clarify that the curve represents the total discharge of water to the natural (phytoremediation) system.

Response: Edit to referenced chart has been made and included with the revised Five-Year Review Report.

Comment 12: Section IV (Page 21), *Operational Data*. The two Y axes on the graph are confusing, especially because the scales differ so widely. To aid the reader, change the left-hand Y axis title to "Influent, VOCs" and the right-hand Y axis to "Effluent, VOCs".

Response: Edits have been made to referenced graph and included with the revised Five-Year Review Report.

Comment 13: Section IV (Pages 23 and 24), *Operational Data*. In the paragraph below the bullets, restate that the increase in VOC removal and 1,4-dioxane removal in the natural system as shown in the graphs is due to the additional recovery wells brought online in the Summer of 2022 (i.e. use similar words to the text on Page 22).

Response: Comment added to referenced paragraph after the bulleted items on page 23 and included with the revised Five-Year Review Report.

Comment 14: Section IV (Page 25), Site Inspection, *Operational Data*. Correct the paragraph listing the parties present at the inspection. Use semi-colons instead of commas after each affiliation and replace the commas with "of" and "from" between the last name and the affiliated group.

Response: Comment addressed in revised Five-Year Review Report.

Comment 15a: For the Comparison of Surface Water Standards table, mention the applicable surface water classification for Deep River/Randleman Lake for the section abutting the facility.

Response: Comment addressed in paragraph following *Comparison of Surface Water Standards* table.

Comment 15b: In the current standard column, note that the values for 1,1-DCE, 1,2-DCA and trans-1,2-DCE are from the EPA National Recommended Water Quality Criteria List and are not established North Carolina Surface Water Quality Standards. Finally, there is a typographical error in the third row of the compound name column for 1,1-DCE.

Response: Edits included with revised Five-Year Review Report.

Comment 15c: The EPA Guidance in the Five-Year Review Recommended Template, OLEM Directive 9200.0-89 indicates that TBC ("to be considered") items should be mentioned if they may call into question the protectiveness of the remedy. On March 13, 2023, the Solid Waste Section (SWS) of the DWM issued a memorandum to operators and owners of active and former landfills advising them that PFAS testing would be required by the SWS starting July 1, 2023. After PFAS testing is implemented at the site, the results might require augmenting the mechanical treatment system or remedy in general. This section should mention the SWS memorandum and the possibility that the remedy may require augmentation.

Response: Please note the referenced SWS memorandum was issued in March 2023, after the five-year period the report covers (through August 2022), and thus not being incorporated at this time. Therefore, no changes to the Five-Year Review Report have been made in response to this comment. We will, of course, comply with any applicable legal requirements regarding PFAS sampling at the Site. Under the RASA this would be accomplished under the Technical Memoranda process.

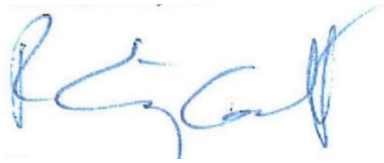
Comment 16: Appendix A – Reference List. Update the reference list as needed in support of changes made for the Five-Year report revision.

Response: Reference List is updated in the revised Five-Year Review Report.

If there are any questions regarding these response items, please contact me at (610) 360-7539.

Respectfully,

Seaboard Group II and City of High Point



R. Craig Coslett, Project Coordinator
de maximis, inc

Attachment
CC: Jackie Drummond - NCDEQ Division of Solid Waste

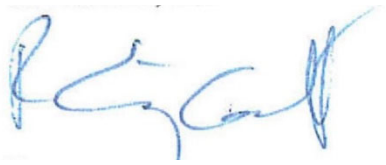
FIRST FIVE-YEAR REVIEW REPORT

FORMER SEABOARD CHEMICAL CORPORATION FACILITY AND RIVERDALE DRIVE LANDFILL SITE JAMESTOWN, NORTH CAROLINA

EPA ID No. NCD071574164

Prepared by

SEABOARD REMEDIAL ACTION TRUST
c/o *de maximis, inc.*
1550 POND ROAD, SUITE 120
ALLENTOWN, PA 18103



---------- 2/27/2023

R. Craig Coslett, Project Coordinator **Date**

REVISED JULY 19, 2023

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS

2017 CCR	2017 Construction Completion Report
AOC	Administrative Order of Consent
AOP+	Advanced Oxidation Process
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Constituent of Concern
DB Pg	Deed Book and Page
DEQ	North Carolina Department of Environmental Quality
EPA	United States Environmental Protection Agency
GC ROD	Guilford County Register of Deeds
GPM	Gallons Per Minute
FYR	Five-Year Review
HMI	Human Machine Interface
ICs	Institutional Controls
LCHT	Leachate
LS	Lift Station
LUR	Land Use Restriction
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIS	Northern Intermittent Stream
NPL	National Priorities List
O&M	Operation and Maintenance
PB Pg	Plat Book and Page
PC	Project Coordinator
PE	Profession Engineer
PG	Professional Geologist
PLC	Programmable Logic Controller
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
RCRA	Resource
ROD	Record of Decision
RPM	Remedial Project Manager
RW	Recovery Well
SCADA	Supervisory Control and Data Acquisition
SITE	Seaboard Chemical / Former Riverdale Drive Landfill
SIS	Southern Intermittent Stream
SRM	Soil Residue Mound
TBC	To be considered
TM#	Technical Memorandum (numbered 1 through 11)
VOC	Volatile Organic Compound

I. INTRODUCTION

As provided in Paragraph F of the Statement of Work, Exhibit A to the Declaration and Order (Docket # 08-SF-249), attached to the Remedial Action Settlement Agreement (RASA) dated December 29, 2008, for the Former Seaboard Chemical and Riverdale Drive Landfill Site, the purpose of a Five-Year Review (FYR) is to evaluate the effectiveness of the Approved Remedy and to assess whether the Approved Remedy remains effective and is protective of human health and the environment. This FYR has been prepared in substantial compliance with the United States Environmental Protection Agency's (EPA's) Comprehensive Five-Year Review Guidance and provided to the Division within 180 days of the end of each five-year reporting period, with the first reporting period commencing on the date the system was placed into operation.

de maximis, inc., Babb and Associates, and Glover Engineering, PLLC have prepared this five-year review on behalf of the Settling Remediators to the RASA (the City of High Point, Seaboard Group II and the Work Parties), pursuant to the paragraph F of the Statement of Work and in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the first FYR for the Former Seaboard Chemical Corporation Facility and Riverdale Drive Landfill Site. The triggering action for this review is the August 25, 2017 notice of System Operation. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Former Seaboard Chemical Facility and Riverdale Drive Landfill Site Five-Year Review was led by R. Craig Coslett, Project Coordinator, Gary Babb, PG, and Rich Glover, PE. The relevant entities including the PRPs and NCDEQ representatives were notified of the initiation of the five-year review. The review covers the period of August 2017 through August 2022.

Site Background

The general vicinity and Site location are shown on Figure 1. The Site consists of two properties as shown in Figure 2, the former Seaboard Chemical facility property located at 5899 Riverdale Drive, Jamestown, NC and the adjacent Riverdale Drive Landfill, a closed municipal solid waste landfill. The former Seaboard Chemical property is approximately 10 acres, while the Riverdale Drive Landfill consists of approximately 102 acres and bounds the former Seaboard facility on three sides.

Between 1974 and 1989, Seaboard Chemical Corporation operated solvent recovery and fuel blending processes at the facility. The facility was granted Interim Status under the Resource Conservation and Recovery Act ("RCRA") as a treatment, storage, and disposal facility in 1982. The facility was divided into 13 operating areas that included, among other things, distillation, fractionation, and condensation of organic solvent wastes. In addition, three unlined surface impoundments were in service at the facility during the time that Seaboard Chemical was in operation. The corporation declared bankruptcy and was not able to fund the cost of performing the necessary site closure and remediation. Removal activities were conducted during 1990 and 1992 to remove all remaining waste materials and certain tanks and equipment from the Seaboard Chemical property. A Removal Action was conducted by the Seaboard Group I, formed by parties that may have used the services of Seaboard Chemical Corporation in the past. The Seaboard Chemical property was administered as an asset of the bankruptcy estate of Seaboard Chemical

Corporation by J. Brooks Reitzel, Jr., bankruptcy trustee. The Trustee was not able to dispose of the property in the course of the bankruptcy proceedings, and ownership is believed to have reverted to the dissolved Seaboard Chemical Corporation by operation of law. Seaboard Group II and the City of High Point have a recorded perpetual easement to perform remedial activities on the property.

The closed Riverdale Drive Landfill (Landfill) was operated, using customary methods in general use at the time, from the 1950's until October 1993. The Landfill was permitted by the NCDEQ Solid Waste Section in 1979. During Landfill operations sections of the two tributary streams that dissect the landfill property were piped so that the landfill could be expanded, and solid waste was used to fill the drainage valleys. From approximately 1966 until 1970, Landfill operations also included the disposal and open burning of spent solvents. The burn pits were periodically cleaned of residue which was accumulated in a mound located near the former burn pits. Presently this residue mound consists of approximately 600 cubic yards of contaminated soil and is referred to as the "soil residue mound". The soil residue mound has been capped with an impermeable synthetic liner and stabilized with a vegetative cover. In 1989, a leachate collection system was added to control leachate seeps along the slopes of the Landfill. Leachate collection lines were also installed beneath the landfill parallel to the Southern Intermittent Stream piped section to intercept leachate flow in the filled stream valley. The leachate from this collection system is accumulated in concrete storage tanks. The closed Landfill is now capped with a minimum of two feet of native soil and a vegetative cover.

After the Removal Action, the Seaboard Group II (Group) was formed to perform a remedial investigation and to prepare a baseline risk assessment/feasibility study for the former Seaboard site. As recommended by the NC Division of Waste Management, the Group and the City entered into an agreement to jointly perform a remedial investigation, because the close proximity of the Landfill and former Seaboard facility made joint investigation of the two properties (Site) advantageous for both the City and the Group. The Parties then entered into an Administrative Order on Consent (AOC) dated January 30, 1996 with the State to perform the remedial investigation, which was completed by the Seaboard Group II and the City of High Point in March 1999. The feasibility study was conducted by the Seaboard Group II and the City of High Point under a separate AOC dated July 22, 1997.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Former Seaboard Chemical Corp Facility and Riverdale Drive Landfill		
EPA ID: **NCD071574164**		
Region: 4	**State:** NC	**City/County:** Jamestown
SITE STATUS		
NPL Status: Non-NPL		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		

Lead agency: State ***[If "Other Federal Agency", enter Agency name]*:**
Author name (Project Coordinator): R. Craig Coslett
Author affiliation: ***de maximis, inc.***
Review period: 8/1/2017 – 8/1/2022
Date of site inspection: 2/15/2023
Type of review: Policy
Review number: 1
Triggering action date: 8/25/2017
Due date *(five years after triggering action date)*: 2/25/2023

II. RESPONSE ACTION SUMMARY

Response Actions

Remedial investigations conducted at the Site have documented the presence of chlorinated and non-chlorinated hydrocarbon compounds in soils, landfill leachate, groundwater (shallow and deep), and surface water. The remedial investigation results also indicated the presence of dense non-aqueous-phase liquids in the fractured bedrock aquifer underlying the Site.

The Remedy Recommendation Document, approved by the Division of Waste Management on September 27, 2005, presents a protective remedial strategy for the impacted media based on the results of the remedial investigation, baseline risk assessment, and feasibility study. The remedial action consists of groundwater extraction and treatment in combination with institutional controls including site access control, recorded land use restrictions, and restriction of water supply well construction. The remedy was designed and constructed to prevent movement of COCs into Randleman Reservoir and the Southern Intermittent Stream, as well as to prevent exposure to impacted soils and groundwater at the Site.

The objectives of remedial action at the Site as listed in the Remedy Recommendation Document include the following:

- Contain the contaminated soils at the source areas to prevent direct contact by potential human and environmental receptors, reduce percolation and intrusion of storm water and reduce migration of compounds of concern ("COCs") into the groundwater,
- Control migration of landfill leachate to prevent discharge to surface water at the Site,
- Control migration of contaminated groundwater at the site to prevent offsite migration and unacceptable impacts to surface water,
- Achieve compliance with North Carolina surface water quality standards for the COCs in the surface water of the onsite streams,
- Achieve compliance with North Carolina groundwater quality standards for the COCs in the groundwater beneath the Site, and
- Restrict future Site uses that could present potentially unacceptable exposure risks (e.g., residential development, use of impacted groundwater, etc.).

For ease in description and comparison to the remedial objectives the components of the Remedial Action have been broken out into the following categories: Site Related and Collection/Treatment Systems.

Site Related

As previously mentioned, the Site consists of two properties, the 10-acre former Seaboard Chemical facility property located at 5899 Riverdale Drive, Jamestown, NC and the adjacent 102-acre Riverdale Drive Landfill (Figure 2). Both properties have been closed consistent with local, state and federal requirements and have met the goals of the remedial action objectives by restricting future Site uses that could present potentially unacceptable exposure risks, including:

- Have been secured in a manner that restricts unauthorized access (fencing with locked gates). There are no operational security cameras located on the former Seaboard Chemical or Riverdale Drive Landfill properties.
- Are subject to recorded land use restrictions (LURs) on future development and groundwater usage.
- Each property has been closed pursuant to approved closure plans. (Seaboard February 1993 letter approval, April 1994 Riverdale Drive Landfill Post Closure Plan)
- Are inspected on an approved schedule to ensure protectiveness.

In addition, in a letter dated January 8, 2021the NCDEQ issued its satisfactory 5-year review of the hazardous waste management permit for the Seaboard Chemical facility.

IC Summary Table

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Seaboard Chemical Property – 10.323ac	Yes	Yes	Guilford County Parcel Number 158477	Restrict all uses of property other agency approved activities. Remedial Activities have been approved	Declaration of Perpetual Land Use Restrictions, GC ROD P.B. 179 Pg. 17, 2010
Materials Recycling Facility (MRF) – 11.657ac	Yes	Yes	Guilford County Parcel Number 209709	Restrict all uses of property other agency approved activities. Remedial Activities have been approved	Land Use Restrictions, GC ROD P.B. 186 Pg. 80, D.B 7588 Pg. 2202, 2014
Riverdale Drive Landfill – 101.779ac	Yes	Yes	Guilford County Parcel Number 209705	Restrict all uses of property other agency approved activities. Remedial Activities have been approved	Land Use Restrictions, GC ROD P.B. 185 Pg. 21, DB 7588 Pg. 2191, 2013

Collection/Treatment System

Construction of the collection/treatment system is documented in the April 2017 Construction Completion Report (2017 CCR) which was approved by NCDEQ on July 25, 2017. This 2017 CCR documents the final status of the remediation systems as constructed and includes modifications made to the components of the system after submittal of the January 15, 2014 Remedial Monitoring and Effectiveness Evaluation Plan. Additional modifications implemented during the current reporting period are provided in the Status of Implementation below. The constructed elements of the Collection/Treatment systems documented in the 2017 CCR include:

Collection System(s)

A network of 8 (eight) groundwater recovery wells are utilized for extraction of affected groundwater. These wells include 1 (one) deep well, PWDR1, and 7 (seven) shallow wells, RW-SIS1, RW-SIS2, RW-SIS3, RW-SIS4, RW-LFS1, RW-LFS2, and RW-NIS. In addition, 5 (five) leachate collection tanks, and the NIS sump (2 pumps) accumulate landfill leachate at the perimeter of the landfill in select locations and from the Northern and Southern Intermittent Stream discharge areas. The locations of the recovery wells and leachate collection tanks are shown in Figure 2. Flows from recovery wells RW-SIS1, RW-LFS1, RW-LFS2, and RW-NIS are combined with the flows from the leachate tanks in Lift Station 1 (LS-1). The discharge from LS-1 is pumped to Lift Station 2 (LS-2) where the flow is combined with the flows from PWDR-1, RW-SIS2, RW-SIS3, and RW-SIS4.

Treatment System(s)

The components of the treatment systems are physically located on both properties with the majority of the components being located on the former landfill property. The Supervisory Control and Data Acquisition (SCADA) system, LS-2, filter building, and the clarifier are located on the former Seaboard property. The description of the Treatment System is broken down between the Mechanical Treatment System (Mechanical System) and the Natural Treatment System (Natural System). All collected water (groundwater and leachate) is processed through the mechanical system to remove the majority of constituents of concern (COCs) prior to processing through the natural system to address the remaining constituents.

Mechanical Treatment System

The Mechanical System refers to the equipment and processes in the extraction well network, leachate collection network, LS-1, clarifier system, sludge handling system, filter building, LS-2, and the irrigation network up to the node control panels (See Figure 3 – Process Flow Diagram). The node control panels separate these components and their associated treatment equipment from those used in the Natural System. The division between the Mechanical System and the Natural System is at the node control panel buildings on the Landfill's East and West Lobes. Within each node control building there is a large electrical control panel that contains the data loggers and multiplexers, as well as the translation interfaces for the SCADA control system. The Mechanical System is comprised of the following major components:

- Lift Station 1 – This is a single enclosure used to collect and transfer the recovered groundwater and the leachate from most of the sources and pump it to the inlet manifold in Lift Station 2 (LS-2). This includes flow from the five leachate collection tank pumps, the NIS leachate sump (two pumps), and recovery wells RWNIS-1, RWSIS-1, RWLFS-1, and RWLFS-2. LS-1 is located nearly 80 feet (vertically) below the elevation of LS-2

near the Landfill perimeter road. LS-1 contains the pneumatic controls for most of the shallow groundwater recovery wells and all the leachate pumps, and the inlet header from the leachate and shallow groundwater recovery well networks.

- Lift Station 2 – LS-2 consists of seven enclosures used to regulate the inlet flow to the clarifier, provide pneumatic control for the remaining shallow groundwater recovery wells, and store and transfer the process flow from the Mechanical System to the irrigation network in the Natural System. The LS-2 inlet manifold contains the proportioning and shutoff valves used to regulate the system flow into the clarifier, then into the filter building, and from the filter building into the settling vat. It also receives the treated process flow from the settling vat proportioning manifold and controls the flow to the discharge networks.
- Clarifier System – The clarifier is a vertical wall cylindrical clarifier system which is approximately 15 feet tall and 18 feet in internal diameter. It receives all the flow from all sources in LS-1 and LS-2 and performs the initial treatment to remove mineral salts by pH adjustment, flocculation and settling.
- Sludge Handling System – The sludge from the bottom of the clarifier is pumped to one of two sludge dewatering boxes (referred to as tipper boxes). These two dewatering boxes are mounted on elevated stands to allow them to be tipped to empty the dewatered sludge. A polymer is added to the sludge in the line between the clarifier and the tipper boxes to enhance dewatering. Sludge is directed to one of the tipper boxes until it is full. At that time, flow is directed to the idle tipper box, and the full box drains any free water to a sump that is pumped into the clarifier equalization tank. Once the sludge is dried sufficiently, the box is emptied, and the solids disposed on-site.
- Filter Building – The filter building receives flow from the clarifier including LS-1 and the shallow bedrock recovery wells RWSIS-2, RWSIS-3, RWSIS-4, and deep groundwater pumping well PWDR-1. It provides filtering to 25-microns+/-, addition of a sequestrant, and polishing in a 6-tray air stripper. It is then passed through to the settling vat in the effluent treatment system.
- Maintenance Building – The maintenance building is located near the filter building and contains the lime and ferric chloride storage tanks, chemical feed pumps, air compressors and other appurtenances associated with the clarifier chemical feed systems. It is also used for storage of spare parts and equipment.

Natural Treatment System

The Natural System is a 32±-acre tree stand consisting of a variety of conifer tree species first planted in 2007 located entirely on the former landfill property. An irrigation system for the tree stand is divided into 16 approximately two-acre phytoremediation zones that can be activated sequentially to dispense water at approximately 50 gpm per zone. The Natural System is comprised of the following components, including irrigation control:

- The tree stand, first planted in 2007, occupies 22 acres on the west lobe of the landfill and about 10 acres on the east lobe;
  - The tree species include loblolly pine, Virginia, and Japanese Black pine as well as eastern red cedar.
  - The trees are arranged in rows 10 feet apart, and trees within a row are roughly on 10-foot centers (approximately 435 trees per acre).

- The irrigation system for the tree stand is divided into 16 approximately two-acre zones that can be activated sequentially to dispense water at about 50 gpm (0.055 inches per hour).
- Each irrigation zone has multiple drip lines.
- Liquid fertilizer can be dispensed to the tree stand via the drip lines (*fertigation*). A fertilizer tank that can be filled with liquid nutrients is connected to a pump, solenoid valve and a flow meter. Nutrient solution can be injected, at a specific dilution factor, into the irrigation water.

Irrigation Controls

In each of the zones, the drip-irrigation system is monitored to prevent over-irrigation and excessive drainage below the root zones of the trees. Each irrigation zone is instrumented with sensors that provide data to the PLC that provides the operator with information needed to manage the volume of irrigation being used in each of the zones.

- Irrometer Watermark sensors measure resistance to the flow of electricity expressed in kohms (kΩ).
- Soil temperature sensors. On each lobe of the landfill, in one of the nests of soil moisture sensors, three soil temperature sensors were installed at the same depth as the moisture sensors. A fourth sensor in each nest was installed at approximately 4-inches below grade to monitor freezing at the drip line elevation.

Operating decisions for the irrigation system are documented on the weekly logs and verified in the field.

Status of Implementation

Following construction completion of the collection and treatment system, the Mechanical System and Natural System were subject to testing procedures to prove the system was operating as designed. This "prove-out" testing is presented in detail in the Construction Completion Report and documented that different components of the constructed elements could meet the design requirements that were established to address the Remedial Action Objectives for the system. Throughout the operation period, the system continued to be optimized to address inefficiencies identified. The following provides a summary of items completed during this reporting period.

- Installation of surge suppressors – lightning strikes and electric surges affected equipment causing extended down time on more than one occasion following startup. Surge suppression has been installed throughout the electrical components.
- Sparge Tank Addition – To optimize treatment, a 200-gallon sparge tank was installed as the initial phase of treatment. The sparge tank provides a number of benefits as the initial treatment step including; balances flow (minimizes peaks of COCs entering the clarifier), increases pH, and mixes the influent coming from the different extractions points prior to chemical additions and further mixing in the clarifier unit.
- Abandonment of Monitoring Wells – In a letter dated May 2018 a list of 26 existing monitoring wells were proposed for abandonment as they were determined to be not needed for future monitoring at the Site. In a letter dated June 5, 2018, DEQ provided approval of the recommended abandonment work which was completed in the summer of 2018.

- PLC/HMI Update – In a letter dated April 18, 2019, a proposal to replace the PLC/HMI control system to eliminate electronic issues that stemmed from obsolete equipment was submitted to DEQ. The proposed work included installation of new hardware (valves and controllers) to replace equipment that was no longer available, wiring of new equipment and installation of new programmable control logic. The proposal also included complete removal of the equipment associated with the Advanced Oxidation Process (AOP+) system that was non-functional. This work was approved by DEQ in a letter dated May 6, 2019.
- The AOP+ system underwent performance tests in the fall of 2014 which determined that the system was unable to achieve the necessary treatment limits for 1,4 dioxane of 3 ug/L to be suitable for discharge to the local municipal treatment system.
- Remedial Monitoring and Effectiveness Evaluation Report – In April 2020, the Seaboard Group II and City of High Point (Parties) submitted the Remedial Monitoring and Effectiveness Evaluation Report that documented operations, maintenance and monitoring of the Extraction and Treatment systems for the Former Seaboard Chemical and Riverdale Drive Landfill Sites for the initial 2 years following DEQ approval of the Remedial Action construction. A recommendation that came out of the April 2020 Report was to evaluate the shallow groundwater interactions within the Southern Intermittent Stream (SIS) area.
- Additional Monitoring Well Installation – During the Spring and Summer of 2021, an evaluation of the existing extraction system, COC source areas, and capacity of the current treatment system (mechanical and natural) was conducted to determine if modifications would increase the effectiveness of the remedial system and improve the removal of COC mass. These efforts included the installation and sampling of additional assessment monitoring wells in the SIS basin area, drawdown tests of the existing extraction wells at the SIS basin, and yield testing of select existing wells at the Seaboard Property near the former Pond 3 area. This work led to the submittal of Technical Memorandum 11.
- Technical Memorandum 11 (TM-11) – On February 3, 2022, TM-11 was submitted to DEQ to evaluate the effectiveness of adding select wells in the vicinity of the SIS basin and near the former Pond 3 Area of the Seaboard property to the extraction system. TM -11 was conditionally approved by DEQ in a letter dated February 18, 2022. The conditions of the approval (IE additional monitoring) were addressed. Work associated with TM-11 is being conducted currently with the initial quarterly report being submitted to DEQ on January 17, 2023.

Systems Operations/Operation & Maintenance (O&M)

Operation, Maintenance, and Monitoring of the system has been conducted by Piedmont Industrial Services since start-up.

As previously presented, following construction completion of the collection and treatment system, the mechanical and natural systems were subjected to testing procedures to prove the system was operating as designed. "Prove-out" testing documented that different components of the constructed elements could meet the design requirements that were established to address the Remedial Action Objectives for the system. The Operation and Maintenance (O&M) plan was developed to outline data collection and monitoring requirements in addition to operation requirements to run the collection and treatment systems. The physical data collection and monitoring activities are documented on a weekly basis by the O&M contractor following the weekly log checklist. A sample copy of the weekly log checklist is provided as Appendix B. The collected information is then used to prepare summaries of Site activities that are submitted to NCDEQ as Quarterly Progress Reports. Data collected weekly and used to prepare the Quarterly Progress Reports includes:

- Meter Readings – Weekly flow information from various locations including leachate collection system, groundwater extraction wells, discharge to natural treatment areas, compressor run times, and pump counter information from individual extraction locations (wells and sumps).
- Chemical Levels – Tank levels are tracked showing chemical usage of the various chemicals employed in operating the system (lime slurry, flocculant, sulfuric acid, sequestrant, and sodium hydroxide).
- In-House Lab Samples – Weekly tests are run on the effluent in order to check for changes prior to the monthly sampling. The weekly tests are run on-site for iron, total suspended solids, pH, oxidation-reduction potential, conductivity, and total dissolved solids. Changes in effluent parameters alert the operator of issues so that the necessary actions can be taken to resolve any potential problems.
- Contract Lab Samples – Monthly samples are collected from the raw influent water, prior to the Air Stripper, and effluent water prior to discharge to the Natural System. These samples are analyzed by a NC Certified Laboratory for volatile organic compounds, inorganics, hardness, pH, total dissolved and suspended solids, and 1,4-dioxane. These samples evaluate the effectiveness of the metals removal process and air stripper operation prior to distribution to the Natural System.
- Well Transducer Readings – Weekly well levels are recorded in the observation wells that are equipped with level transducers. These levels confirm the drawdown by the recovery wells and offer evidence of the capture zone.
- Comments – Specific details on run time, alarms, tasks completed, inspections, shutdowns, and resolutions. Further detail is provided by the operator in the transmittal of the weekly logs.
- Checklist – The check list is composed of dozens of items that need to be checked or serviced for preventative maintenance. The checklist items are broken into categories of bi-weekly, weekly, monthly, and quarterly.

Inspections

Inspections of the Site and operations are conducted on a weekly basis as noted on the Weekly Log Checklist. Inspections are conducted during routine operations and are documented in the daily logbook when issues are identified. Sitewide inspections are also conducted on a quarterly basis and issues are identified in the Site logbook and reported in quarterly reports. If issues are identified, a narrative summary of the issues and the corrective measures taken are provided.

The Landfill is also monitored separately by the City on a quarterly basis for the presence of methane/explosive gases at the waste boundary. These monitoring events are conducted by a third-party contractor and the results are submitted to NCDEQ quarterly. In addition to the routine site inspections of the natural treatment areas, weekly inspections are conducted by City personnel to identify any post-closure issues involving erosion control, site security, leachate seepage, etc. Inspections are also conducted after significant rainfall events to assure site erosion control measures remain effective.

III. PROGRESS SINCE THE LAST REVIEW

This is the 1st FYR for the Seaboard Chemical/Former Riverdale Drive Landfill Site.

The Remedy for the Site has been constructed as designed with approved revisions documented in Technical Memoranda #1 through #10. Additional extraction as documented in Technical Memorandum #11 is currently being evaluated. The constructed remedy has been effective at addressing the Remedial Action Objectives as listed in the Remedy Recommendation Document as follows:

- Contain the contaminated soils at the source areas to prevent direct contact by potential human and environmental receptors, reduce percolation and intrusion of storm water and reduce migration of compounds of concern ("COCs") into the groundwater. **COMPLETED –** through the approved Closure Activities on the Seaboard Site and Former Riverdale Drive Landfill. *Seaboard Group I conducted closure activities at the Facility in 1990 and 1992, during which time the waste materials in surface tanks and equipment, as well as the empty tanks and process equipment, were cleaned and removed from the property. In February 1993 NDEQ Hazardous waste division issued approval of Phase I of the Site Closure. The approved Post Closure Plan for the Riverdale Drive Landfill is dated April 1994.*
- Control migration of landfill leachate to prevent discharge to surface water at the Site. **ONGOING –** Active leachate collection is part of the extraction and treatment systems.
- Control migration of contaminated groundwater at the site to prevent offsite migration and unacceptable impacts to surface water. **ONGOING –** The remedy has been designed to reduce migration of impacted groundwater and to collect contaminated groundwater from strategic locations to prevent migration off Site and/or discharge to surface water. The work identified in TM-11 is being evaluated as a means to further support this corrective action.
- Achieve compliance with North Carolina surface water quality standards for the COCs in the surface water of the onsite streams. **ONGOING –** Fluctuations in COCs concentrations in surface water samples has led to additional corrective measures and further evaluation of additional extraction locations.
- Achieve compliance with North Carolina groundwater quality standards for the COCs in the groundwater beneath the Site. **ONGOING – Progress has been made, but additional evaluation and implementation of** the remedial process is necessary to achieve this objective.
- Restrict future Site uses that could present potentially unacceptable exposure risks (e.g., residential development, use of impacted groundwater, etc.). **COMPLETED –** Land Use Restrictions (LURs) are in place for the three properties; Seaboard Chemical, Riverdale Drive Landfill, and the Materials Recycling Facility (MRF). Annual Certifications are provided confirming details of the LURs are in place.

IV. FIVE-YEAR REVIEW PROCESS

Data Review

The FYR included a review of relevant Site documents, monitoring data, and operational data with a focus on operational data collected in the five-year period from August 2017 through August 2022. A review of findings and data trends for groundwater are included in this section. Time-series graphs showing monitoring data trends in wells are discussed below. Surface water data for this reporting period is tabulated below. The groundwater and surface water data were collected and summarized in annual monitoring reports previously submitted to NCDEQ. Operational data generated as part of on-going long-term remedial action activities were summarized and included in progress reports submitted on a quarterly basis.

The Remedy was designed to capture and extract contaminated groundwater and leachate from select locations along the northern portion of the Site (referred to collectively herein as the "extraction network"). As reported in the 2022 Groundwater Monitoring Report, the collection system has been successful in

retaining contaminated groundwater on Site. Analytical data indicate the extraction and treatment systems are effective at controlling groundwater contamination migration from the Site.

A review of groundwater and surface water monitoring results over the past five years indicates a declining trend in COC concentrations. The contaminant trends in groundwater have been plotted for the past ten years to show this trend and establish the background COC concentrations prior to full-time operation of the treatment system. Note that the treatment system was in operation on an intermittent basis beginning in 2013/2014 prior to the official startup date in August 2017. The effect of this earlier extraction operation is evident from the trend graph plots. A discussion of this data for each of the media types is provided below:

Groundwater Data

Groundwater analytical data for the past ten years have been summarized for total volatile organic compounds (VOC) and 1,4-dioxane. The COC trend graphs for these compounds are provided in Figures 4 and 5. Please note the variation in the scale of the y-axis for these graphs, which is significant at some locations.

VOC Trend Graphs

The concentration trend of VOCs on Figure 4 indicates significant COC reduction in monitoring wells MW-3C, PW-5D, PW15D, and PW-16D. These monitoring wells are all within the capture zone of the primary extraction well PW-DR1. These trends indicate the capture zone created by the PW-DR1 is controlling groundwater flow and preventing further off-site COC migration. The noted reduction in COC concentration is related to dewatering of the shallow bedrock aquifer and the introduction of less contaminated water.

The VOC contaminant trend in monitoring well W-4A, located downgradient of the former Seaboard Site, shows a similar COC reduction from groundwater extraction operations. Shallow extraction well RW-SIS2 is located immediately adjacent to monitoring well W-4A and has lowered the groundwater elevation by 10’ since operation began.

Groundwater monitoring well MW-15A is located immediately downgradient of the Soil Residue Mound (SRM) and there are no extraction wells located immediately downslope of this area. Groundwater contaminants from the SRM area are captured by the hydraulically downgradient extraction systems. The VOC trend in this monitoring well shows an overall downward trend confirming the remedial approach to cap the SRM in 2010. The synthetic cap was installed in May/June 2010 to eliminate rainfall infiltration and the generation of leachate from the waste mass.

The VOC data plot for monitoring well PW-3D does not show a clear trend. This well, located between the former Seaboard Site and the Landfill, has been outside of the influence of the groundwater extraction system until the recent TM-11 work which is currently being evaluated. This well is also located hydraulically downgradient of the former Pond 3.

1,4-Dioxane Trend Graphs

The COC data graphs for 1,4-dioxane follow a similar trend noted with the VOC graphs (Figure 5). The COC concentrations in the monitoring wells near the primary extraction well PW-DR1 show a significant reduction in 1,4-dioxane concentration. This data indicates dewatering of the shallow bedrock.

Monitoring well W-4A has also shown a decreasing 1,4-dioxane trend due to its proximity to groundwater extraction well RW-SIS2. The continued operation of the expanded extraction associated with TM-11 should also assist to improve the groundwater quality at this location.

The 1,4-dioxane trend in monitoring well MW-15A, located downgradient of the SRM, shows a steady decrease in COC concentration. As discussed earlier, this is likely due to the installation of the synthetic cap which serves to reduce rainfall infiltration and the generation of leachate.

The 1,4-dioxane concentration trend in PW-3D is increasing, however, the overall 1,4-dioxane concentration is relatively low and it is anticipated that the continued operation of the TM-11 extraction wells located immediately upgradient of PW-3D should improve this trend.

Surface Water Data

Surface water samples are collected annually at several locations across the Site and on Randleman Lake (Figure 2). The surface water samples collected on Randleman Lake are collected at two discrete depths: 1' below the surface and 1' above the bottom of the Lake. A brief description of the sample locations is provided below:

Northern Intermittent Stream (NIS) – Samples SW-1 and SW-2
Southern Intermittent Stream (SIS) – Samples SW-3, SW-4, and SW-5
Randleman Lake – Samples SW-6, SW-DRP2, SW-7, and SW-DRP11

Surface Water VOC Data

The laboratory analytical data for surface water samples collected from the Northern Intermittent Stream (NIS) and Randleman Lake (surface and bottom samples) did not identify appreciable concentrations of VOCs over the initial 5 years of remedial system operation. Note that the NIS has a limited watershed area, and the sample locations are frequently dry.

The upper SIS samples have shown occasional single-digit detections of VOCs, especially in surface water sample SW-3. The SW-3 surface water sample location is hydraulically downgradient of the former Seaboard Site. The VOC concentrations in these samples are significantly lower than observed prior to the operation of the remedial system. Pre-remedial VOC concentrations at the SW-3 location ranged from 100 ug/l to 200 ug/l prior to operation of the shallow extraction wells at the upper SIS area.

The VOC results for the lower SIS sample (SW-4) has shown a highly variable COC concentration over the past 5 years. This variation is attributed to rainfall patterns and groundwater contribution to the SIS.

Surface Water Samples - 1,4-Dioxane Concentrations

Sample ID	10/2017	11/2018	9/2019	10/2020	10/2021	10/2022
Northern Intermittent Stream Samples						
SW-1	Dry	12 ug/l	BQL	Dry	Dry	Dry
SW-2	BQL	22 ug/l	BQL	Dry	Dry	14 ug/l
Randleman Lake Samples						
SW-6(S)*	13 ug/l	BQL	1.6 ug/l	BQL	BQL	BQL
SW-6(B)*	14 ug/l	BQL	BQL	BQL	BQL	BQL
SW-DRP2(S)	19 ug/l	BQL	1.4 ug/l	0.83 ug/l	BQL	BQL
SW-DRP2(B)	21 ug/l	BQL	BQL	BQL	BQL	BQL
SW-7(S)	26 ug/l	BQL	BQL	BQL	BQL	BQL
SW-7(B)	20 ug/l	BQL	BQL	BQL	BQL	BQL
SW-DRP11(S)	31 ug/l	BQL	1.3 ug/l	BQL	1.4 ug/l	1.0 ug/l
SW-DRP11(B)	31 ug/l	BQL	BQL	BQL	1.2 ug/l	BQL
Upper Southern Intermittent Stream Samples						
SW-5	14 ug/l	23 ug/l	5.8 ug/l	3.5 ug/l	2.2 ug/l	1.6 ug/l
SW-3	9.7 ug/l	13 ug/l	1.7 ug/l	3.9 ug/l	4.6 ug/l	2.1 ug/l
Lower Southern Intermittent Stream Sample						
SW-4	1,700 ug/l	48 ug/l	1,800 ug/l	79 ug/l	1,500 ug/l	14 ug/l

Randleman Lake Samples: (S)=Shallow sample; (B)=Bottom sample
* Upgradient background samples

Surface Water 1,4-Dioxane Data

The laboratory analytical data for surface water samples collected from the NIS reported detectable concentrations of 1,4-dioxane in samples collected in 2018 and 2022. These detections appear to be attributed to above-average rainfall and runoff from the phytoremediation zones at the time of sample collection. The sample collected at SW-2 on November 7, 2018 occurred after a 0.92 inch rainfall on November 5/6/7, 2018. The sample collected at SW-2 on October 19, 2022 occurred after a 0.64 inch rainfall on October 17/18, 2022.

There is no evidence of erosion or seeps from the phytoremediation zones. The contaminant source is likely overland flow of rainfall from the phytoremediation areas as observed during the sample

collection event. Also, there are no known sources of 1,4-dioxane upgradient of the phytoremediation zones as the area is primarily residential.

The surface water samples from Randleman Lake (1' below surface and 1' above bottom samples) reported concentrations of 1,4-dioxane in all samples during the initial startup of operations (2017). Since that time, the concentrations have been minor and may be attributed to background sources. Note that surface water sample SW-6 is located 3,500' upstream of the Site and provides background surface water quality.

Randleman Lake surface water sample SW-DRP11 is located 4,100' downstream of the Site at the confluence of Richland Creek. At least two known sources of 1,4-dioxane in surface water are located on Richland Creek upstream of this confluence. The two known sources of 1,4-dioxane upstream of surface water monitoring station SW-DRP11 are:

Waste Industries of High Point C&D Landfill: Permit No. 41-16
Former Jackson Lake Road Landfill: Permit No. NONCD0000820

The NC Solid Waste Section is aware of these sources as groundwater/surface water assessments have been conducted. Note that the former Jackson Lake Road Landfill site is regulated under the Pre-Regulatory Landfill Program.

The upper SIS samples have shown a significant reduction in the 1,4-dioxane concentration over the initial 5-year operational period. The operation of the three shallow extraction wells (RW-SIS2, RW-SIS3, and RW-SIS4) along the upper SIS has resulted in an improvement of surface water quality.

The 1,4-dioxane results for the lower SIS sample (SW-4) have shown a highly variable contaminant concentration over the past 5 years of operation. This variation is attributed to rainfall patterns and groundwater contribution from the SIS drainage channel.

Operational Data

The information provided in this report includes five years of monitoring following the NCDEQ's approval of the construction of the remedy, August 25, 2017 through August 2022. This information is essentially a summary of the data that has been previously reported to the department in the form of Quarterly Progress Reports, including the 3rd Quarter 2017 through the 3rd Quarter 2022.

Several operational issues were encountered that required modifications to the system throughout this five-year period. Summaries are provided below:

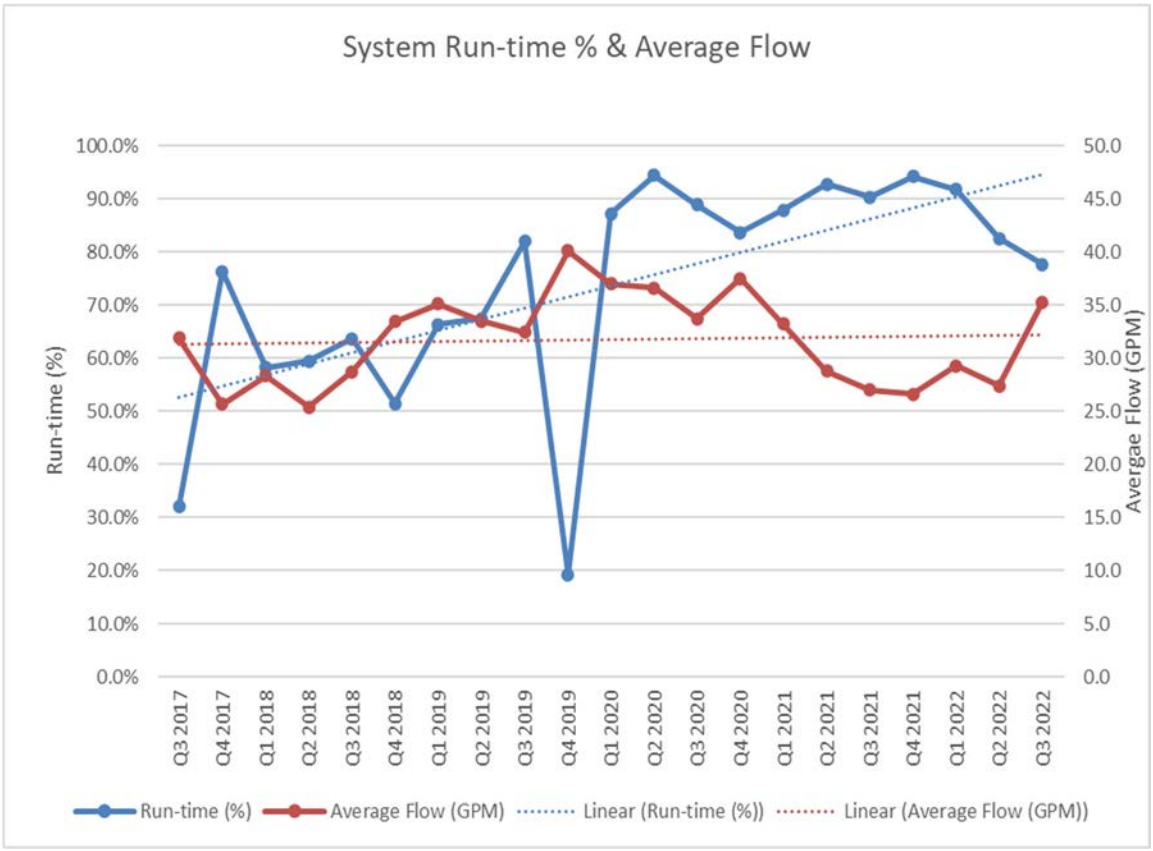
- February 2018 – Hazen & Sawyer re-evaluated Mechanical System, recommended additional air sparging prior to clarifier and chemical dosing modifications.
- Spring 2018 – New air sparge tank installed prior to clarifier to enhance metals removal. Installed surge suppressors to protect treatment system components from lightning strikes and other electrical spikes.
- December 2018 – Replaced fiber optics cable from LS-1 to primary treatment building.

- Summer 2019 – Removed AOP+ (PhotoCat) system from LS-2 treatment enclosure for recycling.
- October through December 2019 – Major upgrade of PLC/HMI control systems.
- Summer 2020- Spring 2021 – Evaluated the SIS corridor by way of video, pump tests, dye tracing, new monitoring well installations.
- Summer 2020 – Summer 2021 – Continued fertigation of the entire phyto system along with tissue sampling to ensure proper nutrient levels within the Natural System.
- September 2021 – Hazen & Sawyer re-evaluated the mechanical treatment system for the addition of the new extraction wells along the SIS corridor as described in TM-11. New chemical dosing setpoints were recommended along with the installation of a soda ash feed system.
- Fall 2021 – Winter 2022 – A new plug was installed at the upper end of the NIS collection pipe along with regrading of areas of ponding water along the route to reduce inflow and infiltration of clean surface water into the collection system.
- Fall 2021 – Planted 400 additional trees to fill in bare areas of the phyto zones and other areas of seepage.
- Fall 2021 – Replaced and repositioned two lysimeters.
- Spring 2022 – Installed new soda ash feed system per Hazen recommendations.
- Summer 2022 – Plumbed in two new wells and two existing wells along the SIS corridor into the extraction system per TM-11.
- Summer 2022 – Rovisys integrated the soda ash feed system and new wells into the PLC system and added priority programming for source points.
- Summer 2022 - Fall 2022 – Redesigned the twenty-four miles of drip lines and purchased materials for the wholesale replacement of existing lines. Installation is scheduled to be done in the Winter of 2022-2023.
- Summer 2022-Winter 2022 – Evaluated and tested a new radio network for transmitting well transducer levels to the PLC. Installation is in progress.
- Ongoing – Replacement of collection system pumps to higher capacity pumps. The majority of extraction pumps have been changed to higher capacity pumps based on monitoring activities, mostly because of higher precipitation and leachate collection.

In addition, there were many shorter duration modifications / optimizations completed throughout the 5-year reporting period. These modifications are presented on the following table:

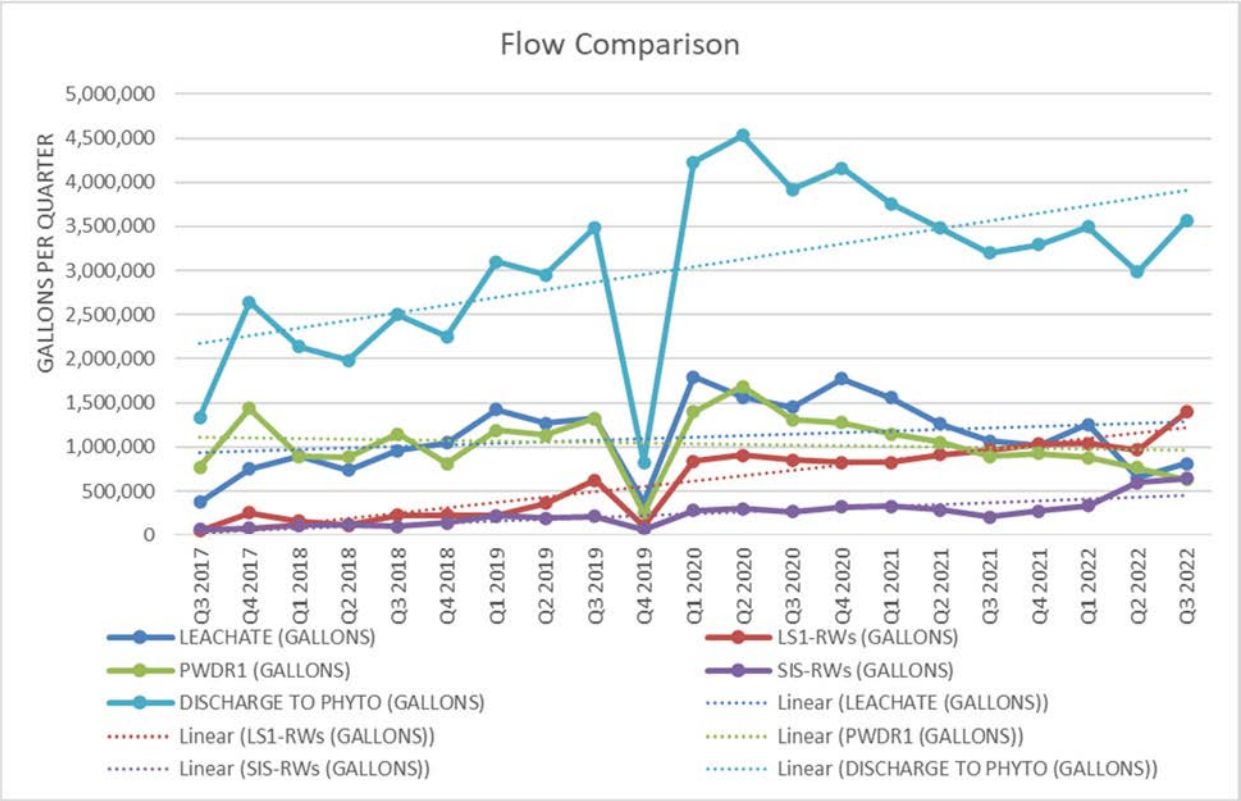
Issues Encountered	Date	Resolution
• Frozen chemical feed lines and irrigation control valves	18-Jan	Added heat trace and/or insulation to lines
• Electrically damaged communication I/O cards	18-Feb	Added surge suppression on low voltage lines
• Intermittent power failures	18-Feb	Added low voltage UPS devices
• Scaling of pumps and process lines	18-Mar	Modified chemical feed rates and sequestrant type per Hazen report
• Scaling of pumps and process lines	18-May	Installed air sparge tank prior to clarifier
• Intermittent communication loss	18-Dec	Replaced fiber optic cable from LS-2 to LS-1 and the node buildings
• Scaling of pump lines from LS-1 and LS-2	18-Dec	Re-piped the force mains in LS-1 to allow individual citric washes while in operation
• LS-1 compressor failed due to water build-up from unloading	18-Dec	Replaced LS-1 compressor and wired LS-2 compressor for temporary back-up
• Intermittent communication loss	19-Jan	Replaced Profibus connections
• Pressure loss at LS-1 compressor	19-Jun	Replaced pneumatic pumps, valves, and regulators
• Clogged sludge lines	19-Oct	Replaced sludge pumps and re-piped manifolds
• Continual communication losses and lack of replacement parts	19-Oct	Replaced all drives, communication I/O racks, HMI's and PLC
• Filter Building (FB) compressor frequent failures	20-May	Tied air lines to LS-2 compressor and eliminated small FB compressor
• PWDR-1 motor failure	21-Jul	Replaced pump and motor with one more properly sized for current operational parameters
• Ongoing issues with LS-1 and LS-2 compressors	22-Feb	Installed oil-mist separators and purge lines to increase load time
• Sludge drying box hydraulics failure	22-May	Replace hydraulic seals, installed additional grease fittings, increased pressures
• Clarifier cone and chemical feed failure	22-Aug	Replaced supports and fee connections with higher resistance materials
• Sludge drying box loss of efficiency	22-Aug	Replaced screens and placed additional cleanings on an annual maintenance schedule

As presented, modifications were implemented throughout this reporting period. With the difficulties encountered, the overall system run time has been calculated to be 74% during this reporting period. System run time has increased significantly following completion of the ongoing modifications listed above. As shown below:



The trend for the run-time percentage has continued upward over the 5-year period. Dips in the runtime are due to system modifications such as the PLC control network replacement in Q4 2019. The trend for the average system flow has stayed steady over the review period. As contaminated aquifers are de-watered, extraction levels have been lowered and additional source points have been brought online to maximize the system resources.

The influent flows have varied over the course of the review period. Variations in the flow are due to seasonal changes such as rainfall, operating efficiencies, and de-watering of certain areas. Due to increased efficiencies of the system, larger extraction pumps, and additional flow sources, the amount of water processed has generally increased. The chart below illustrates the total processed flow vs. the various extraction sources:

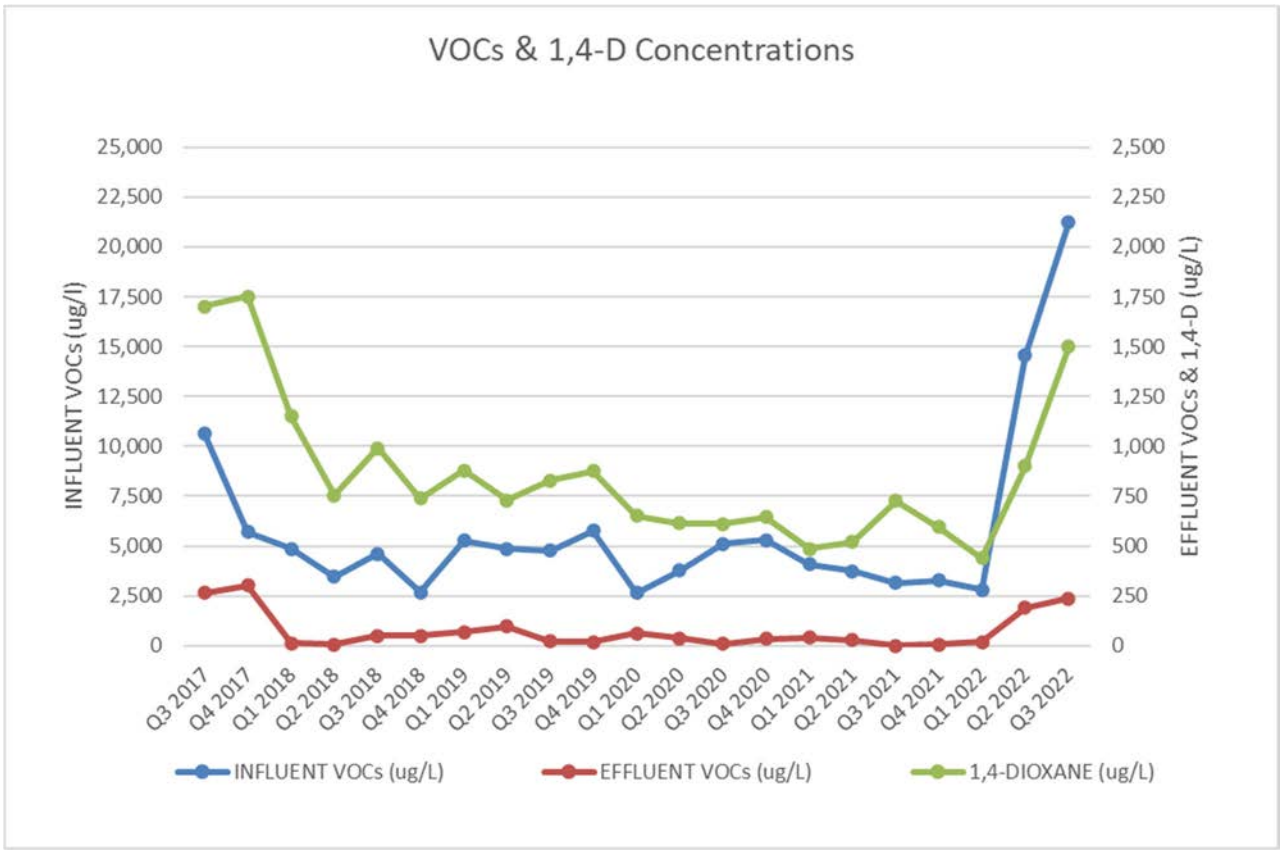


The processed water from the shallow recovery wells at LS1 and SIS has increased during the entire period due to larger extraction pumps, additional sources, higher run-times, and increased precipitation. The amount of leachate processed has increased due to larger extraction pumps, higher run-times, and increased precipitation. PWDR-1 production has decreased over the review period, even though pumping elevations have been lowered, as the aquifer is dewatered. The overall result shows a general increase in total production through the system.

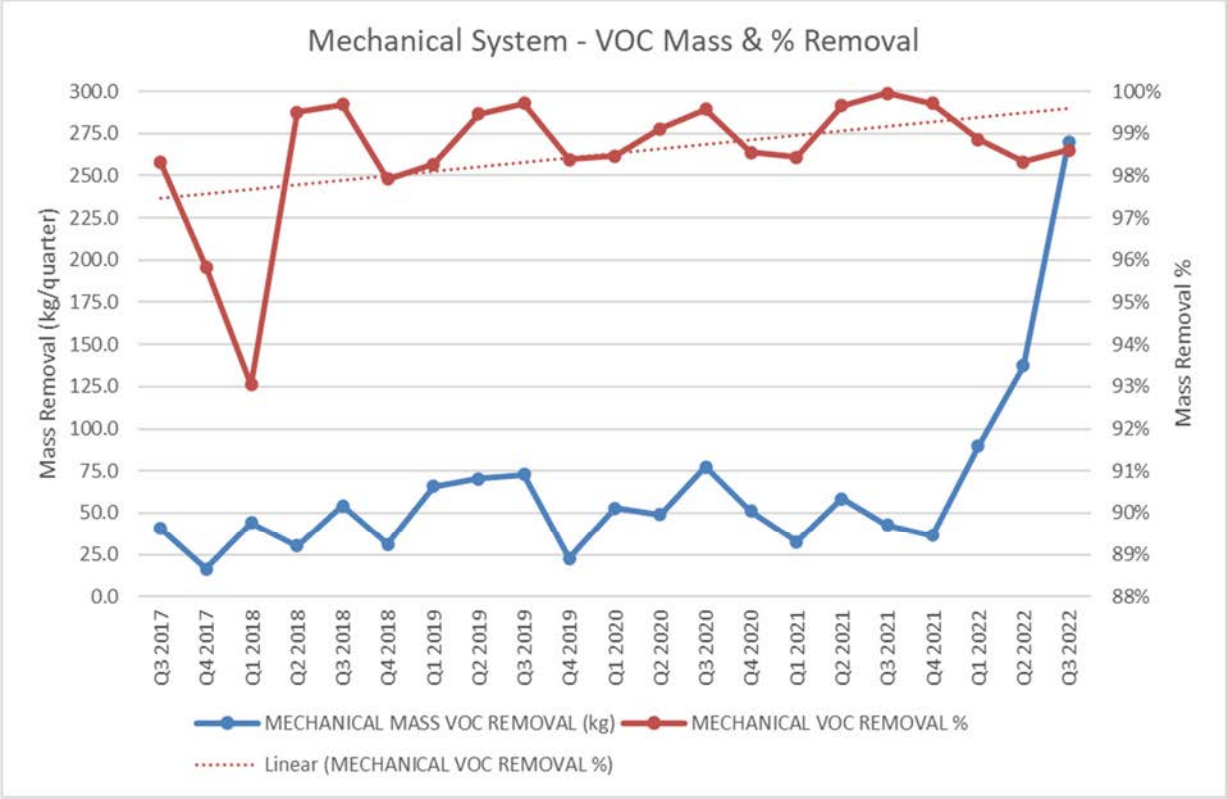
A breakdown of the amount of flow from each of the individual source points over the 5-year review period is detailed in the table below:

ESTIMATED INDIVIDUAL SOURCE VOLUMES (2017-2022)				
	TOTAL GALLONS	AVG. GALLONS PER MINUTE	% OF TOTAL FLOW	% OF GROUP
PWDR1	24,952,443	10.7	34.4%	% OF GROUP
LCHT-1*	203,501	0.1	0.3%	1%
LCHT-2	4,787,621	2.1	6.6%	18%
LCHT-3	563,432	0.2	0.8%	2%
LCHT-4	1,694,953	0.7	2.3%	6%
LCHT-5	6,315,118	2.7	8.7%	24%
LCHT-NIS1	6,815,507	2.9	9.4%	26%
LCHT-NIS2	5,860,026	2.5	8.1%	22%
	26,240,158	11.3	36.1%	100%
RW-NIS	8,051,605	3.5	11.1%	55%
RW-LFS1*	3,566,640	1.5	4.9%	24%
RW-LFS2	2,188,461	0.9	3.0%	15%
RW-SIS1*	949,128	0.4	1.3%	6%
	14,755,834	6.3	20.3%	100%
RW-SIS2	1,885,197	0.8	2.6%	31%
RW-SIS3	2,373,984	1.0	3.3%	39%
RW-SIS4	1,778,122	0.8	2.4%	29%
	6,037,303	2.6	8.3%	100%
CITRIC/RAIN/TANK FILL	179,908	0.1	0.2%	
BACKWASH	442,062	0.2	0.6%	
	621,970	0.3	0.9%	
	72,607,708	31.2	100%	
* INOPERATIVE PUMP COUNTERS SKEW SOME RESULTS				

Influent concentrations to the system gradually decreased over the 5-year review period indicating an effective remedy in the areas of treatment. In order to further prevent COC migration through the SIS corridor, recovery wells RW-SIS7, RW-SIS8, R-1, and PWSF-1 were brought online in the summer of 2022 as detailed in TM-11. The resulting influent COC concentrations increased immediately. These events are illustrated in the chart below (note the 10x concentration difference between the left and right vertical axis):



Due to the increase in the amount of water processed, the increase in run-time, and the increase in removal efficiency, the total VOC mass destruction from the Mechanical System has generally increased as well over the review period, even though influent concentration decreased over that same time. Once the additional recovery wells were brought online in the summer of 2022, the mass destruction rate increased dramatically. The total mass of VOCs removed by the Mechanical System during the initial 5-year operating period is 1346 Kg (2967 lbs). The results are illustrated in the chart below:



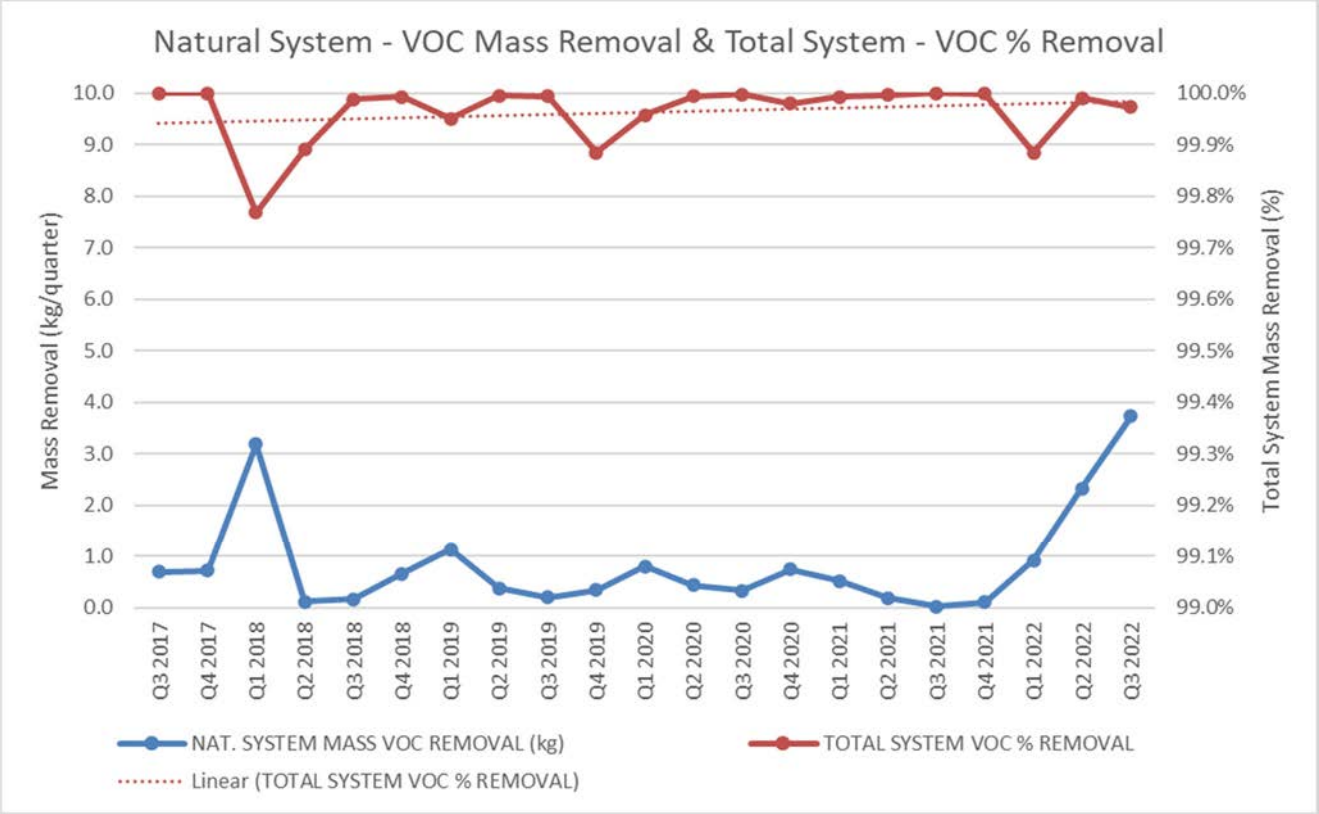
The Natural System received and processed approximately 72 million gallons of irrigation water from the Mechanical System. The irrigation system consists of 16 individual zones which comprise a total of 32.5 acres.

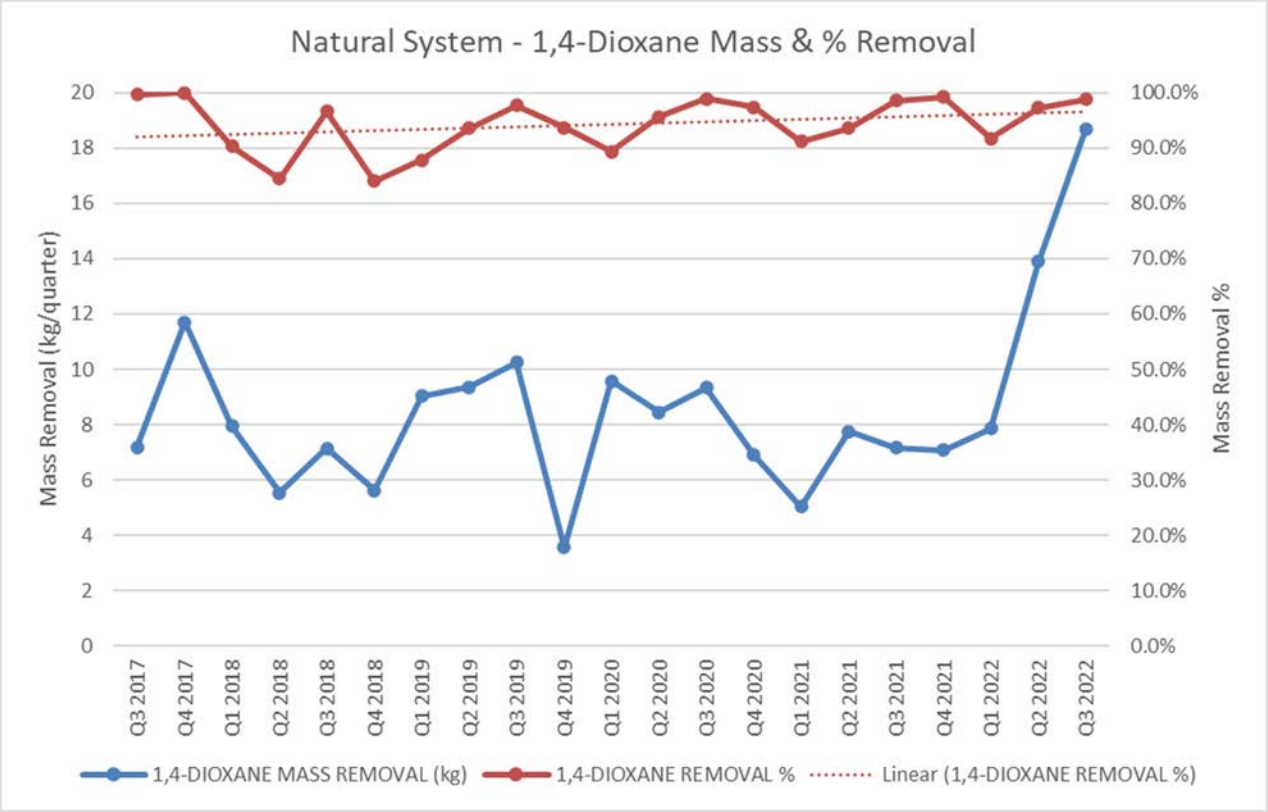
The mass of VOCs and 1,4-dioxane removed by the Natural System is determined by a comparison of the influent concentration from the Mechanical System and the effluent concentrations determined from samples collected from the lysimeters installed in various irrigation zones. The total mass of additional VOCs and 1,4-dioxane removed during the initial 5-year operating period is 18 kg (40 lbs.) and 179 kg (395 lbs) respectively.

The percent of COC removal is based on the calculated water balance for the natural treatment area which takes into account the following parameters:

- Irrigation water applied to the 32.5 acre treatment area
- Daily rainfall measurements
- Rate of water use by the tree stand
- Interception (rainfall caught by the needles of the trees and evaporated)
- Overland Flow or Runoff

The Natural System has shown a consistent removal pattern over the 5-year review period. The remaining VOC's removal by the Natural System results in a 99.97% total overall removal for the entire 5-year period. The Natural System has also been able to achieve over a 94.3% 1,4-dioxane removal during the same period. After the additional recovery wells were brought online in the summer of 2022, the mass removal rates have increased dramatically. These results are illustrated in the charts and table below:





MASS DESTRUCTION DETAILS (2017 Q3 - 2022 Q3)		
	MASS REMOVED (kg)	REMOVAL EFFICIENCY (%)
VOC's		
MECHANICAL SYSTEM	1346	98.7%
NATURAL SYSTEM	18	97.5%
TOTAL VOC's	1364	99.97%
1,4-DIOXANE		
NATURAL SYSTEM	179	94.3%
OVERALL SYSTEM TOTAL	1543	99.3%

Site Inspection

The inspection of the Site was conducted on 2/15/2023. In attendance were Eric Aufderhaar, Joshua Hanks, and Dan Girdner from NCDEQ; Robby Stone, Melinda King, and Mike Spencer of the City of High Point; Gary Babb of Babb and Associates; Rich Glover of Glover Engineering; Craig Coslett with ***de maximis***; and Bruce Braswell, a Trustee for the Group. The purpose of the inspection was to assess the protectiveness of the remedy.

Participants of the Inspection met at the Treatment facility located at Recovery Way before Inspecting the various components of the Remedy using vehicles to traverse the Site. The FYR Inspection included the routine annual site inspection conducted by the NC Hazardous Waste Section due to the former Seaboard Chemical's status as a treatment, storage, or disposal facility.

V. TECHNICAL ASSESSMENT

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

YES - The remedial actions summarized above in Section II – Response Action Summary have been fully implemented and operate on a continuous basis. Numerous upgrades to the system have been evaluated and incorporated into the treatment system as described in the Status of Implementation section of this report.

Surface water COC levels have been reduced due to the operation of the extraction system and contaminant levels are consistently at or near standards and or target values. Groundwater COC levels have also been significantly reduced as the extraction systems have outpaced COC recharge from the source areas. Further expansion of the extraction system, as provided by TM-11, will enhance containment of COC migration and improve mass removal near the source areas.

The capture zones created by the extraction systems are controlling the majority of the contaminant plume in the SIS watershed. Additional evaluation is ongoing to determine the effectiveness of the expanded shallow aquifer extraction system at the SIS Basin Area and the shallow bedrock extraction system at the Pond 3 Area. These two new extraction areas are being evaluated quarterly for 1 year. The first two quarterly evaluation reports of these systems had been submitted to the NC DEQ at the time the 5YR Report submittal.

Improvements are also underway to replace the irrigation lines in the phytoremediation zones which will better balance flow to each zone, tailor the irrigation flow based on past operational observations, and allow for easier inspection and maintenance of the irrigation system.

The institutional controls implemented at the Site, primarily security fencing around the entire site and land use restrictions, have been effective in preventing exposure to contaminated soil, waste residues, and treatment operations. No unauthorized access to the Site has been reported during the 5-year operational period.

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

YES - The exposure criteria at the Site have not changed significantly over the 5-year operating timeframe. The COCs have not varied from the original assessment work performed at the Site; however, the concentration of the COCs has decreased during the 5-year operational period. This overall reduction in COC concentrations improves the exposure potential for workers at the Site. Also, the institutional controls implemented prior to full operation of the treatment system have prevented exposure from unauthorized personnel.

Regulatory standards and guidance have changed since the effective date of the RASA in 2008. Both groundwater and surface water standards are periodically updated based on the most recent available toxicological data. The most recent update to these standards occurred in 2022. A summary of the updated groundwater and surface water regulatory standards for the COCs at the Site is provided below:

Comparison of Groundwater Standards

Compound Name	Original Standard *	Current Standard **
1,1,2-Trichloroethane	No Standard	0.6 ug/l
1,1-Dichloroethane	700 ug/l	6 ug/l
1,1-Dicloroethene	7 ug/l	350 ug/l
1,2-Dichloroethane	0.38 ug/l	0.4 ug/l
1,2-Dichloropropane	0.56 ug/l	0.6 ug/l
1,4-Dioxane	7 ug/l	3 ug/l
Acetone	700 ug/l	6,000 ug/l
Chloroethane	2,800 ug/l	3,000 ug/l
Chloroform	0.19 ug/l	70 ug/l
Ethylbenzene	29 ug/l	600 ug/l
Toluene	1,000 ug/l	600 ug/l
trans-1,2-Dichloroethene	70 ug/l	100 ug/l
Trichloroethene	2.8 ug/l	3 ug/l
Vinyl Chloride	0.015 ug/l	0.03 ug/l
Xylenes (Total)	530 ug/l	500 ug/l

* Standard at the time of signing RASA (2008)

** As of January 2023

Comparison of Surface Water Standards[1]

Compound Name	Original Standard *	Current Standard **
1,1,2-Trichloroethane	200 ug/l	2,500 ug/l
1,1-Dichloroethane	42 ug/l	6 ug/l
1,1-Dichloroethene	0.057 ug/l ****	300 ug/l ****
1,2-Dichloroethane	0.38 ug/l ****	9.9 ug/l ****
1,4-Dioxane	3 ug/l	*0.35 ug/l* ***
Acetone	350 ug/l	3,100 ug/l
Chloroethane	860 ug/l	NE
cis-1,2-Dichloroethene	33 ug/l	60 ug/l
Methylene Chloride	4.7 ug/l	11,000 ug/l
Tetrachloroethene	0.8 ug/l	0.7 ug/l
trans-1,2-Dichloroethene	700 ug/l ****	290 ug/l ****
Trichloroethene	3.08 ug/l	2.5 ug/l

Compound Name	Original Standard *	Current Standard **
Vinyl Chloride	2 ug/l	0.025 ug/l
Xylenes (Total)	88.5 ug/l	6,200 ug/l
2-Butanone	2,090 ug/l	20,000 ug/l

[1] The Randleman Reservoir is classified as a Water Supply
NE – Not Established
* Standard at the time of signing RASA (2008)
** As of January 2023
*** Not a regulatory standard but an In-Stream Target Value
**** EPA National Recommended Water Quality Criteria for Aquatic Life & Human Health

While several of these updated standards represent significant changes, they are not expected to affect the current remedial action at the Site. The Mechanical System and Natural System have been designed to address the concentration of VOCs and 1,4-dioxane present at the Site. As this is a containment remedy, continued groundwater and surface water monitoring is necessary to evaluate the effectiveness of the groundwater extraction systems. Continued monitoring, evaluation and modification (when applicable) to the extraction and treatment systems will improve the efficacy of the remediation and further improve water quality at the Site.

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

NO - As provided in this report, frequent modifications/improvements to the mechanical and natural treatment systems, extraction systems, groundwater and surface water monitoring, and operation/maintenance have occurred over the 5-year operational period. These modifications/improvements were implemented to increase the effectiveness of the overall remedial system to meet the objectives of the RASA. Any limitation identified in the remedial system has been proactively addressed in a timely manner.

VI. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:

	Issue Category: Monitoring			
	Issue: Detectible COC concentrations in on Site Surface water (NIS) during periods of heavy precipitation.			
	Recommendation: Increase monitoring to quarterly to evaluate NIS surface water conditions following replacement of irrigation lines in the phytoremediation areas.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	PRPs	State	1/1/2025

The laboratory analytical data for surface water samples collected from the NIS reported detectable concentrations of 1,4-dioxane in samples collected in 2018 and 2022. These detections appear to be attributed to above-average rainfall and runoff from the phytoremediation zones at the time of sample collection.

Replacement and balancing of the irrigation lines in the phytoremediation zones is scheduled to be completed in 2023. It is anticipated that this work will minimize runoff.

	Issue Category: Monitoring			
	Issue: Fluctuating COC concentrations in on Site Surface water (SIS)			
	Recommendation: Complete TM-11 Evaluation / Increase monitoring of select surface water locations in the SIS to quarterly.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	PRPs	State	1/1/2024

The upper SIS samples have shown a significant reduction in the 1,4-dioxane concentration over the initial 5-year operational period. The operation of the three shallow extraction wells (RW-SIS2, RW-SIS3, and RW-SIS4) along the upper SIS has resulted in an improvement of surface water quality. However, the 1,4-dioxane results for the lower SIS sample (SW-4) has shown a highly variable COC concentration over the past 5 years of operation. This variation is attributed to rainfall patterns and resultant flow in the SIS.

The impact of additional extraction wells located in SIS basin on surface water quality at the SW-4 location is currently being evaluated as part of the TM-11 study. Quarterly monitoring and evaluation of the SW-3 and SW-4 locations is recommended to supplement that study.

	Issue Category: Monitoring			
	Issue: Potential Impacts from other sources.			
	Recommendation: Eliminate downgradient surface water sample collection from SW-DRP11 locations from future sampling events			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	No	PRPs	State	8/31/2023

Surface Water monitoring station SW-DRP11 is located 4,100’ downstream of surface water monitoring station SW-7 at the confluence of Randleman Lake and Richland Creek. There are two known sources of 1,4-dioxane surface water contamination in the Richland Creed watershed, located between 2 and 3 miles upstream from the Randleman Lake confluence. Surface water concentrations of 1,4-dioxane as high as

21 ug/l have been documented downstream of these two known sources. The collection of surface water samples at the SW-DRP11location does not provide representative samples of water quality downstream of the Seaboard/Riverdale Drive Landfill Site.

	Issue Category: Remedy Performance			
	Issue: COCs in groundwater below the Site			
	Recommendation: Continue Implementing the Remedial Action			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	PRPs	State	2/29/2028

The selected remedy is operating as designed and as demonstrated by the data collected over the initial 5 years of system operation is effective at controlling the migration of Site COCs downgradient of the Site. Evaluation of COCs in groundwater below the Site will continue.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	*Planned Addendum Completion Date:* N/A
Protectiveness Statement: The Remedy is protective of human health and the environment. The immediate threats were addressed through separate removal and closure activities at the Seaboard Chemical Property and Former Riverdale Drive Landfill Sites. Effective measures to address the remedial action objectives have been constructed and are currently being implemented and monitored.	

VIII. NEXT REVIEW

The next five-year review report for the Seaboard Chemical/Former Riverdale Drive Landfill Site is required five years from the completion date of this review and is anticipated to be February 2028.

APPENDIX A – Reference List

- *2017 Construction Completion Report*
- *Remedial Recommendation Document*
- *Remedial Monitoring and Effectiveness Evaluation Report, 2022*
- *Quarterly Progress Reports (2017 through 2022)*
- *Weekly O&M Log Reports*
- *Annual Groundwater and Surface Water Monitoring Reports, (2018, 2019, 2020, 2021, and 2022)*
- *WeatherUnderground, Piedmont Triad International Airport Station*

APPENDIX B – Sample Copy of Weekly Log Checklist

WEEKLY LOG WEEK: _____ TO _____ _____ DATE

SEABOARD GROUP II & THE CITY OF HIGH POINT _____ BY

METER READINGS:	ID	READING	UNITS
LS1 LEACHATE	FIT-122		GAL
LS1 RWs	FIT-123		GAL
PWDR1	FIT-212		GAL
SIS RWs	FIT-213		GAL
PHYTO DISCH.	FIT-400C		GAL
POTW DISCH.	FIT-400D		GAL
AIR STRIPPER	B-605		RUN HRS
LS1 COMPR. (d1)	AC-120		RUN HRS
LS1 COMPR. (d4)	AC-120		LOAD HRS
LS2 COMPR. (d1)	AC-200		RUN HRS
LS2 COMPR. (d4)	AC-200		LOAD HRS
ELECT. METER	HP-EM		KWH
WATER METER	HP-WM		CF
BACKWASH	FIT-603		GAL
SPARGE BLOWER	B-600		RUN HRS
RAIN GAUGE	RG		mm
(WEEKLY READING)			

CHEMICAL LEVELS (GALLONS):			
SULFURIC ACID	T-303		WARE.
SODIUM HYD.	T-304		(GAL.)
WATER-WORX	T-614		
FLOCCULANT	T-615		
LIME SLURRY	T-711		
FERRIC CHLORIDE	T-712		
CITRIC ACID (LBS.)	WARE.		
SODA ASH (LBS.)	WARE.		
SODA ASH (GAL.)	T-713		

EFFLUENT LAB SAMPLE		
	Fe	
	TSS	
	pH	
	ORP	
	COND	
	TDS	
683.00 -		

ZONE FLOW	
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14
	15
	16

WELL LEVELS	
	OWDR-4
	OWDR-2
	PWDR-1
	OWDR-3
	PW-6D
	OWLFS-2
	PW-16D
	PW-15D
	LAKE

PUMP COUNTERS	
	LCHT-1
	LCHT-2
	LCHT-3
	LCHT-4
	LCHT-5
	LCHT-NIS1
	LCHT-NIS2
	RW-NIS
	RW-LFS1
	RW-LSF2
	RW-SIS7
	RW-SIS8
	RW-SIS2
	RW-SIS3
	RW-SIS4
	R-1
	PWSF-1

SOURCE WATER: PWDR-1 SIS RWs LS1 RWs LS1 LCHT
(CIRCLE APPLICABLE SOURCES)

COMMENTS: (DATE, TIME ARRIVED, TIME DEPARTED, PERSONNEL ON SITE, TASKS COMPLETE, ISSUES)

CHECKLIST:

(INITIAL ALL THAT APPLY) (DATE)							
(2 TIMES PER WEEK)	MON	TUES	WED	THUR	FRI	SAT	SUN
CHECK FLOC QUALITY (2X PER TRIP)							
SKIM CLARIFIER							
REPLACE LS2 FILTER BAGS							
CHECK ELECTRIC PUMPS							
CHECK PNEUMATIC PUMPS							
(1 TIME PER WEEK)							
CHECK CALIBRATION TUBES							
CHECK CHEMICAL STORAGE AREAS							
TIP DRYING BOX							
MOVE DUMPED SLUDGE							
CHECK PUMP COUNTERS							
REPLACE FB FILTER BAG							
CLEAN RAIN BUCKET (NO WATER)							
CHECK GAUGES & METERS							
CHECK VALVES							
CHECK GATES/LOCKS							
(MONTHLY)							
SAMPLE INF., EFF., & PRE A.S.							
GREASE BLOWER (2X PER MONTH)							
CHECK BLOWER OIL							
CHECK AIR COMPRESSOR OIL							
CHECK FIRE EXTINGUISHERS							
CHECK EYE WASH STATIONS							
PEST CONTROL IN JBZs & BUILDINGS							
MOW & LIMB CRITICAL PATHS, BLDGS.							
CALIBRATE pH PROBES							
CALIBRATE METHANE DETECTORS							
CHANGE CITY WATER FILTER							
FLUSH HYDRANT AND YARD HYDS.							
CHECK FENCE INTEGRITY							
CHECK FOR STRESSED VEGETATION							
CHECK FOR PONDING WATER							
CHECK IRR. CONTROL BOXES							
(QUARTERLY)							
CHECK FOR CAP SUBSIDENCE							
CHECK FOR SLOPE EROSION							
CHECK CAP EROSION							
CHECK SLOPE DRAINS							
CHECK FOR LEACHATE BREAKOUTS							
VACUUM PANELS							
MOW ALL AREAS							
CHECK EACH ZONE FOR LEAKS							
SAMPLE TCLP & 8270 (ANNUALLY)							
CHANGE AIR FILTERS							
CLEAN EXHAUST FANS							
INVENTORY SPARE PARTS							
CHECK FOR NIS SCOUR							

COMMENTS:

FIGURE 1 – Site Location Map

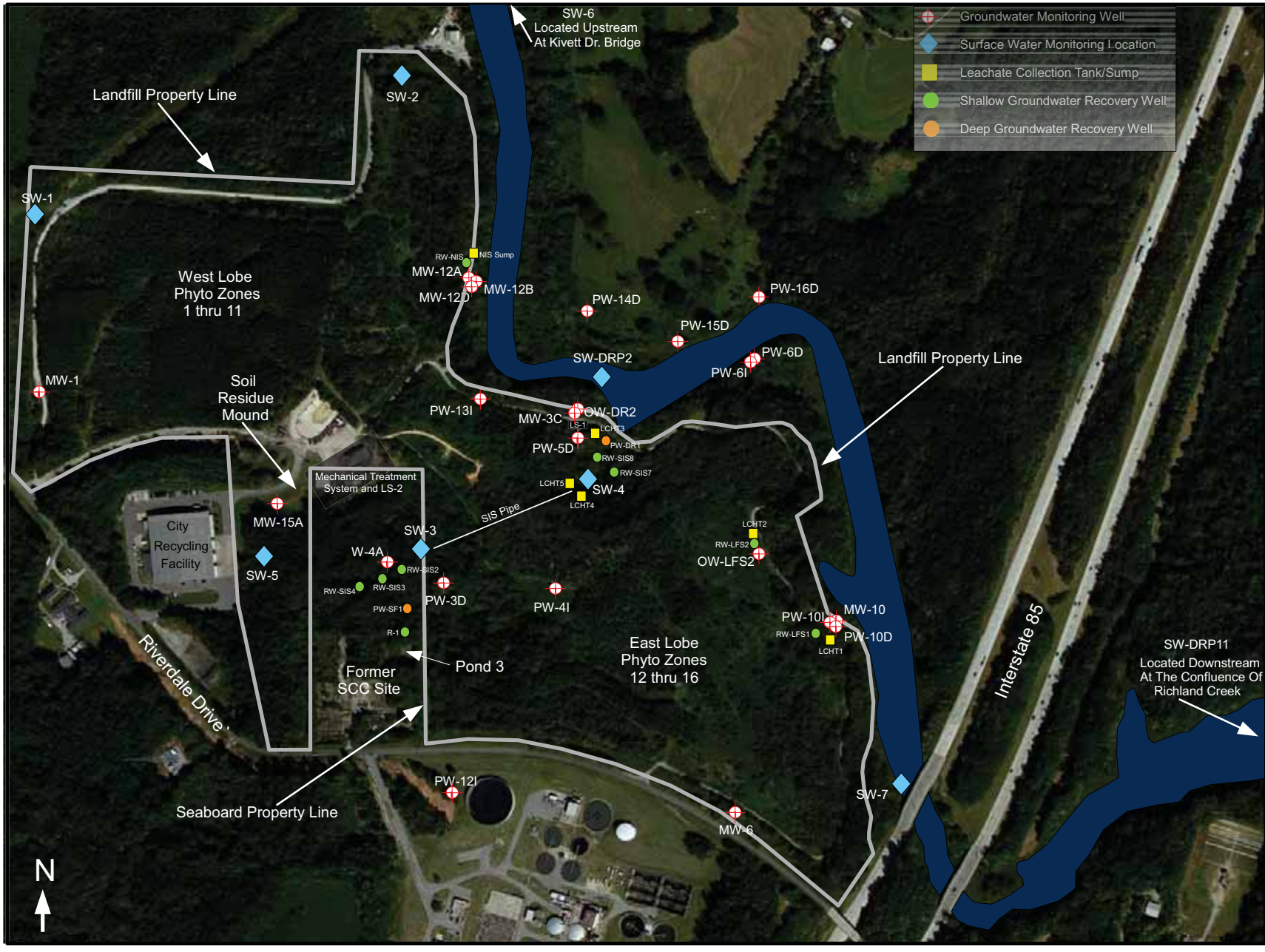
Figure 1 – Site Location Map

Former Seaboard/Riverdale Drive Landfill Site
5899 Riverdale Drive
Jamestown, North Carolina

Seaboard Group II
and
The City of High Point

Scale:	Prep. By:	Rev. By:	Date:
1” = 1.5 miles	G. Babb	G. Babb	February 2023

FIGURE 2 – Site Features Map



Seaboard Group II
and
The City of High Point

Figure 2 – Site Features Map

Surface Water, Well, and Leachate Tank Locations
Former Seaboard/Riverdale Drive Landfill Site
5899 Riverdale Drive
Jamestown, North Carolina

Date: February 2023

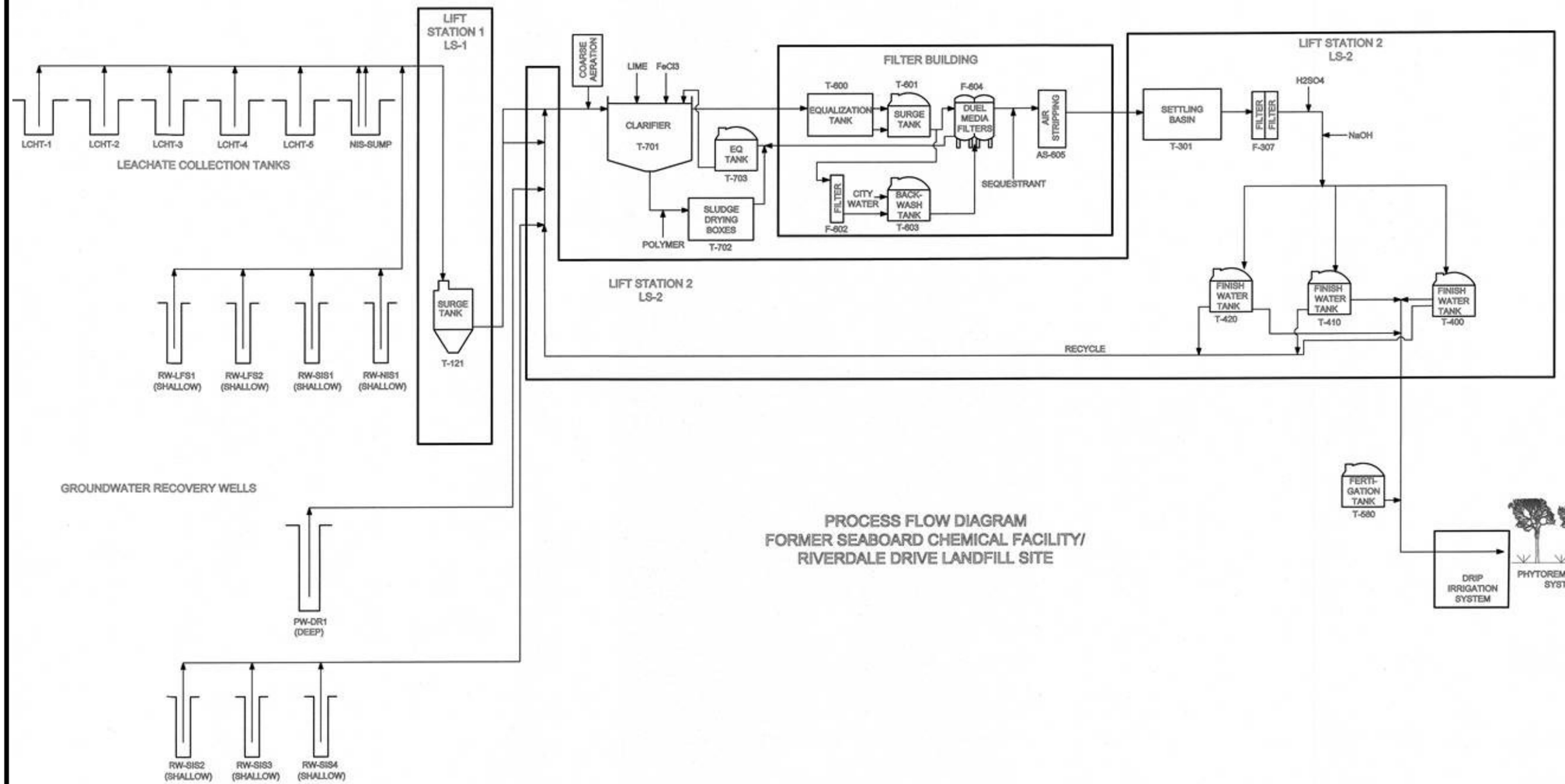
Rev. By: G. Babb

Prep. By: G. Babb

Scale: 1" = 360'

Figure 2

FIGURE 3 – Process Flow Diagram



PROCESS FLOW DIAGRAM
FORMER SEABOARD CHEMICAL FACILITY/
RIVERDALE DRIVE LANDFILL SITE

Seaboard Group II
and
The City of High Point

Date: February 2023

Rev. By: R. Glover

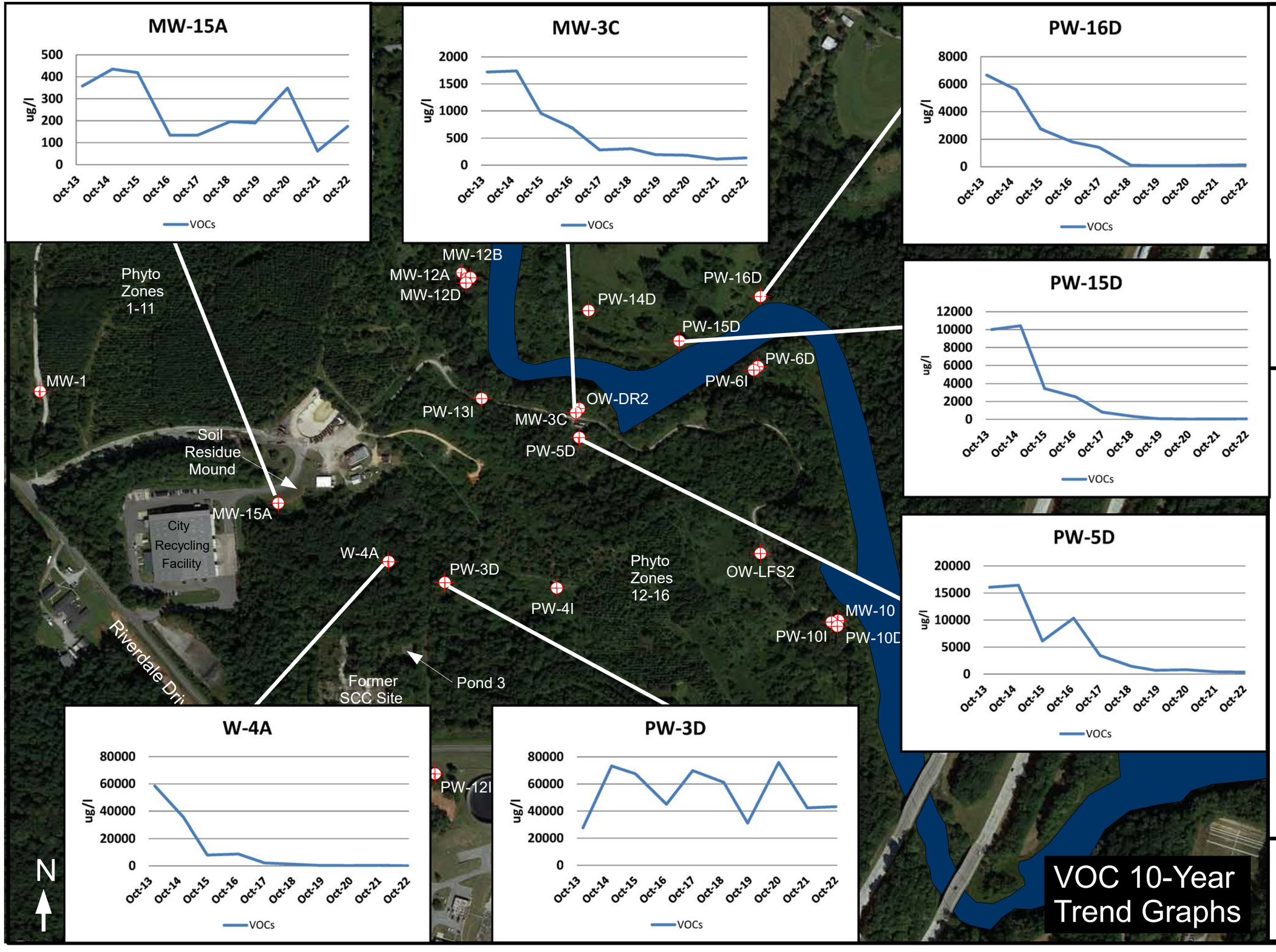
Prep. By: R. Glover

Figure 3
Process Flow Diagram
Former Seaboard/Riverdale Drive Landfill Site
5899 Riverdale Drive
Jamestown, North Carolina

Scale: Not to Scale

Figure 3

FIGURE 4 – VOC Trend Graphs



Seaboard Group II
and
The City of High Point

Date: February 2023

Rev. By: G. Babb

Prep. By: G. Babb

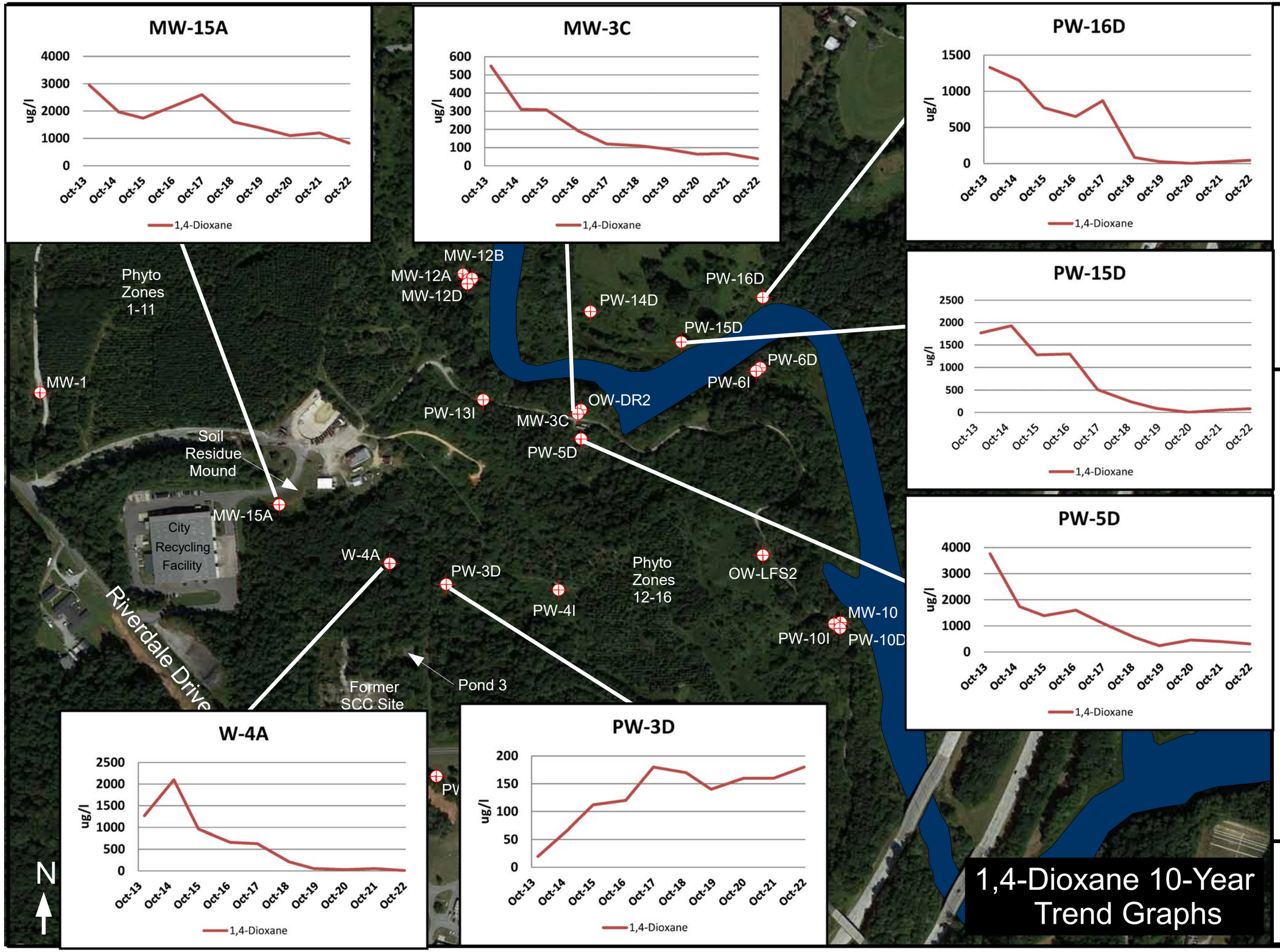
Scale: 1" = 360'

Figure 4

10-Year Trend Graph of VOC Concentrations
Former Seaboard/Riverdale Drive Landfill Site
5899 Riverdale Drive
Jamestown, North Carolina

Figure 4

FIGURE 5 – 1,4-Dioxane Trend Graphs



Seaboard Group II
and
The City of High Point

Date: February 2023

Rev. By: G. Babb

Prep. By: G. Babb

Scale: 1" = 360'

Figure 5

10-Year Trend Graph of 1,4-Dioxane Concentrations
Former Seaboard/Riverdale Drive Landfill Site
5899 Riverdale Drive
Jamestown, North Carolina

Figure 5