for the

Alpha Portland (Otisca Industries) Site [DEC Site No. 734006]

Ogle Road [Tax Map No. 083.-01-07.0] Town of Dewitt, Onondaga County, New York

Prepared for:

Alpha Omega Products, LLC P.O. Box 6418 Syracuse, NY 13212

Prepared by:



19 Genesee Street Camillus, New York 13031 Ph: (315) 672-8726 Fax: (315) 672-8732

TDK Project No. 2021063

May 12, 2022 [Revised September 16, 2022]

Table of Contents

1.0	Introduction		
	1.1	Purpose and Objectives	1
	1.2	Project Organization	2
	1.3	Regional Location and Physical Description	2
2.0	SITE EN	VIRONMENTAL HISTORY	. 3
3.0	DESCRI	PTION OF GEOLOGY	. 4
4.0	SITE CHARACTERIZATION (SC) SCOPE OF WORK – GENERAL DESCRIPTION		. 5
	4.1	Phase 1 (Overburden) Investigation Program	5
	4.2	Phase II (Bedrock) Investigation Program (If Required)	5
5.0	MAPPING PROGRAM		. 6
	5.1	Site Topography & Drainage Patterns	6
6.0	AREAS	OF CONCERN	. 7
7.0	SAMPLING AND ANALYSIS PROGRAM (PHASE I – OVERBURDEN INVESTIGATION)		
	7.1	Overview	7
	7.2	Soil Boring (Drilling) Program	8
	7.3	Groundwater Monitoring Well Construction	9
	7.4	Analytical Methods / Parameters	10
	7.5	Sampling Rationale	11
	7.6	Standards, Criteria and Guidance	13
8.0	BEDRO	CK MONITORING WELL INSTALLATIONS (FUTURE – PHASE II IF REQUIRED)	13
9.0	CONTIN	IGENCY PLAN	14
10.0	SOIL VA	APOR INTRUSION CONSIDERATIONS	15
11.0	SC Invi	ESTIGATION REPORT	15
12.0	MANAG	GEMENT OF INVESTIGATION-DERIVED WASTES	16
13.0) HEALTH AND SAFETY PLAN16		
	COMMUNITY AIR MONITORING PROGRAM (CAMP)16		
15.0) References		

Appendices

APPENDIX 1: REPORT FIGURES

- ◆ Overall Site Plan [Sheet OP-1]
- ◆ Site Characterization Plan [Sheet SC-1]
- APPENDIX 2: SOIL BORING LOG
- APPENDIX 3: MONITORING WELL CONSTRUCTION DETAILS
- **APPENDIX 4: DECONTAMINATION PROGRAM**
- APPENDIX 5: GROUNDWATER SAMPLING FIELD LOG
- APPENDIX 6: QUALITY ASSURANCE PROJECT PLAN (QAPP)
- APPENDIX 7: INVESTIGATION-DERIVED WASTE (IDW) MANAGEMENT PROGRAM
- APPENDIX 8: SITE-SPECIFIC HEALTH AND SAFETY PLAN
- **APPENDIX 9: COMMUNITY AIR MONITORING PROGRAM**

Exhibits

EXHIBIT 1: GALSON LABORATORY ANALYSIS REPORT – TEST BORING #4 (APRIL 1985)

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

1.0 Introduction

The New York State Department of Environmental Conservation (DEC) has designated the Alpha Portland (Otisca Industries) Site, located on Ogle Road in the Town of Dewitt, NY (Site) as a *Potential Hazardous Waste Disposal Site* (I.D. No. 734006), based on the historic storage and handling of regulated waste materials in connection with operation of a former cement manufacturing plant. Accordingly, the DEC has requested that an investigation be conducted to determine the potential impacts of prior waste handling operations on current Site conditions¹. Consistent with the DEC's request and on behalf of Alpha-Omega Products, LLC (Alpha-Omega), TDK Engineering Associates, P.C. (TDK) has prepared this Site Characterization Work Plan (SCWP) in order to evaluate the potential chemical impacts to surface and subsurface media at the Site.

Several targeted investigation and remediation programs have been performed at the Site since closure of the cement plant in 1980. Contaminants of concern have been identified (e.g., solvents, PCBs) in connection with historic waste storage and handling operations. Accordingly, the investigation described herein will expand the prior efforts, in order to further assess known or suspected source areas of concern (AOCs) and potential contaminant migration patterns. The investigation will be conducted in a phased approach, with initial efforts consisting of the assessment of overburden soils with respect to the subsurface profile and presence or absence of constituents of concern, in addition to sampling of surface waters and sediments. Based on this information, a determination will be made as to whether an expanded investigation effort(s), either horizontally (e.g., additional sampling points) and/or vertically (e.g., advancement into bedrock) is warranted.

The SCWP described herein was formulated based on our discussions with representatives of the current property owner (Alpha-Omega) and the DEC to-date, in addition to a review of an extensive volume of prior reports, correspondence, etc. concerning the Site that covers a span of nearly 40 years (i.e., April 1983 through April 2020). Specific documents which were reviewed and that provided the majority of background information for the Site are listed in the *References* section of this work plan.

1.1 Purpose and Objectives

The overall objectives of the Site Characterization (SC) program are to:

- Define the nature and extent of contamination in connection with former waste storage and handling areas that have been documented at the Site.
- Determine the pertinent topographic, geologic and hydro-geologic characteristics of the Site, in order to identify potential contaminant migration pathways.

¹ Letter from Susan Edwards, Director, Remedial Bureau D of DEC to Alpha-Omega Products, LLC, dated April 16, 2020.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

• Provide sufficient information to determine whether further investigation or remedial action(s) may be warranted at the Site.

1.2 Project Organization

The following are the key individuals for the investigation portion of the project, along with a brief description of their responsibilities.

- Matthew E. Travis, Project Manager, NYSDEC: Responsible for regulatory oversight.
- Richard Riccelli, Alpha-Omega Products, LLC: Representative of property owner.
- Joe Durand, P.E., Project Manager, TDK Engineering Associates, P.C. (TDK): Responsible for overall project management.
- John Herrmann, P.E., Project Engineer, TDK: Responsible for coordination and field observation of subsurface investigation activities, selection of sampling locations and methods, review and analysis of hydrogeologic and contaminant data and report preparation.
- Consultant(s)/Contractors: Alpha-Omega and/or TDK will also retain several contractors/consultants to complete the SC investigation. These may include, but not necessarily be limited to the analytical laboratory and drilling contractor. The specific firms to be used for these services will be determined and the NYSDEC Project Manager notified, accordingly.

1.3 Regional Location and Physical Description

The property has a total area of 121 acres and is accessed from the southern limit of Ogle Road. Railroad tracks border approximately 1,500 lineal feet (LF) of the eastern property line and adjoining parcels to the north, east and south include residential properties and the Jamesville Elementary School. These areas are served by municipal water². A 250-foot wide parcel owned by National Grid (overhead power lines) and Clark Reservation State Park borders the Site to the west.

A segment of Butternut Creek, a DEC Class C(T) stream is located approximately 500 feet east of the eastern property boundary. An approximately 0.12-acre freshwater wetland/pond, a portion (roughly ²/₃) of a 3-acre wetland/pond and a (Class C) tributary to the creek are located along the south and southeastern perimeters of the Site. The closest DEC wetland is located 800 feet west of the western boundary.

The northern area (roughly 17 acres) of the property is comprised of a formerly permitted limestone mine (DEC No. 70626) which has been reclaimed. The former cement production plant, support buildings and waste

² Ref: Onondaga County Department of Finance – Office of Real Property Services: SDG Image Mate Online.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

storage and handling areas, which are the focus of this Site Characterization (SC) investigation encompass an approximately 25-acre area near the southeastern corner of the property.

Currently, the Site is occupied by several abandoned cement plant production and support buildings, silos and and a former machine shop area. Based on the current zoning of the property, future use/occupancy of the Site would be considered likely to be commercial and/or light industrial, however no specific redevelopment plans are under consideration at this time.

Topography throughout the Site is varied due to prior mining and excavation/stockpiling operations, however in general the ground surface slopes downward to the southeast, toward the tributary to Butternut Creek.

The limits of the overall property and surrounding area features are shown on the *Overall Site Plan [Sheet OP-1*, Appendix 1]. The Site Characterization (SC) area, including identification of various cement facility production, storage and support structures are shown on the *Site Characterization Plan [Sheet SC-1*, Appendix 1].

2.0 SITE ENVIRONMENTAL HISTORY

The Alpha Portland Cement Company (Alpha Portland) conducted various operations related to the production of cement, including mining of limestone aggregate at the property dating from 1914 to 1980. The most recent production process utilized an 11-foot (ft) diameter by 400-ft long coal-fired kiln.

From approximately 1976 to 1979, in an effort to reduce stack emissions associated with utilization of coal Alpha Portland imported waste solvents to the Site to be utilized as a fueling source for the kiln. The wastes were transported to the Site in tanker trucks and drums and reportedly staged in the area shown on *Sheet SC-1*. One of the tankers, which had been buried at a depth of approximately 30 feet below the ground surface was uncovered and found to contain regulated levels of PCBs.

Other subsurface investigation efforts conducted in the mid-1980s indicated the presence of volatile organic compounds (e.g., tetrachloroethene, toluene), regulated metals (e.g., lead, chromium) and/or PCBs within the former waste storage area and/or "lagoon" sediments. Refer to *Sheet SC-1* for approximate locations of the historic (1985) soil borings.

The above-referenced buried tanker and its contents, along with approximately 700 tons of contaminated soil were reported to have been removed from the Site in the late 1980s. Other reported waste disposal activities have included, but have not necessarily been limited to the removal and off-site disposal of 457 (50-gallon) drums of unspecified liquid, solid and sludge wastes and 11,500 gallons of bulk liquid wastes (late 1981), several transformers containing PCB oil (1986/1987) and eleven (11) drums containing non-hazardous oil and grease (2009). The available background information also includes sampling and waste profiling documentation for 2,000 gallons of waste oil in January 2009. PCB's were reported at a concentration of 170 parts per million (ppm) in a sample of oil taken from an above-ground storage tank (AST). This concentration exceeds the NYS hazardous waste threshold of 50 ppm.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

Operation of the kiln also resulted in the generation of "Clinker" and Clinker Dust (CKD), which was subsequently stockpiled at various locations on the Site as indicated on *Sheet SC-1* [Appendix 1]. In December 2013, a Beneficial Use Determination (BUD) for utilization of the CKD as a component of animal bedding was made by the DEC (BUD No. 1084-7-34). The approval process included obtaining samples of material from various Clinker, CKD and/or apparent mixed CKD/unidentified fill piles for PCB analysis in 2009. The sample locations are shown on *Sheet SC-1*. No PCB detections were reported.

The BUD program also included obtaining samples of CKD for analysis for the presence of regulated metals in September 2014. Only one compound (selenium) exceeded the current BUD criteria for use as General Fill³ (4 ppm), with concentrations ranging from 7.5 to 9.4 ppm. It should be noted, however, that the reported concentrations were compliant with the Soil Cleanup Objectives (SCOs) for protection of human health – residential, restricted-residential and commercial occupancies.

3.0 DESCRIPTION OF GEOLOGY

The previously cited (mid-1980s) subsurface investigation program included the drilling of five (5) soil borings and excavation of eight (8) test pits within and down-gradient⁴ from the former kiln and waste storage area. The approximate soil boring locations (TB-1 - 5) are shown on the *Site Characterization Plan* [*Sheet SC-1*, Appendix 1].

Three of the soil borings (TB-1, 2 and 3) were advanced to depths of 41 - 42 feet below ground surface (bgs). The soil profile generally consisted of gravel with varying amounts of fine sand, silt and clay to a depth of approximately 38 feet bgs, overlying a fine-grained layer comprised of fine sand, silt and/or clay. No groundwater was encountered.

Test boring TB-4 was positioned adjacent to an on-site pond. The soil profile consisted of sand and silt with some (i.e., 20 to 35%) gravel to a depth of about 13 feet bgs, overlying a peat layer with some silt/clay 13 to 18 feet and fine-to-medium sand from 18 to deeper than 21 feet bgs. Soil samples were obtained at depths of approximately 5 feet, 10 feet and 20 feet bgs and submitted to Galson Technical Services (Galson) for performance of Flame Ionization Detector (FID), PCB and halogenated organics scans. Galson's laboratory report is attached [Exhibit 1]. No detections were reported.

Groundwater was encountered at 11 feet bgs and a 2-inch diameter PVC monitoring well was installed in TB-4 at a bottom depth of 18.5 feet and screened from 18.5 to 8.5 feet bgs, however no groundwater analysis records

³ Lower of protection of public health for residential land use or protection of groundwater (6 NYCRR 360.13).

⁴ With respect to groundwater flow direction based on local topography.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

were available in connection with this well. Its intended purpose appears to have been limited to functioning as a piezometer for assessment of groundwater levels adjacent to a spring-fed pond (below).

According to a 1987 Closure Work Plan prepared by Keith A. Schimel, PhD., P.E., the pond is a discharge point for a regional (Clark Reservation) drainage channel and is also recharged by two natural springs. As such, the pond and underlying saturated soils reportedly create a localized groundwater "mound" which results in the relatively shallower water table in adjacent boring TB-4. The fine-grained soils (i.e., peat/silt/clay) identified in TB-4 may also contribute to a localized "perched" groundwater condition immediately adjacent to the pond.

4.0 SITE CHARACTERIZATION (SC) SCOPE OF WORK – GENERAL DESCRIPTION

The Site Characterization (SC) will be conducted in general conformance with the DEC's *DER-10 / Technical Guidance for Site Investigation and Remediation*, issued May 3, 2010. Subject to DEC approval, it is anticipated that the field investigation work will include the following general tasks:

4.1 Phase 1 (Overburden) Investigation Program

- Review of available background information concerning the Site's environmental history (completed).
- Coordination of a Site reconnaissance/mapping program and determining proposed soil boring, monitoring well and surface soils/sediment sampling locations (in progress).
- Advancement of an estimated eight (8) soil borings within overburden soils throughout the Site.
- Installation of groundwater monitoring wells in an estimated four (4) of the soil borings.
- Collection of soil and groundwater samples from the soil borings and monitoring wells, for laboratory analysis and comparison of results to the applicable Standards, Criteria and Guidance (SCG).
- Collection of surface water and sediment samples from the two ponds/wetlands located along the southern boundary of the Site.
- Conducting an assessment of potential contaminant exposure pathways based on the analytical results, surface drainage patterns and subsurface geologic and hydrogeologic characteristics.

4.2 Phase II (Bedrock) Investigation Program (If Required)

The field and analytical information from the Phase I investigation will be compiled and assessed with respect to whether additional investigation, including vertical advancement of borings and construction of monitoring wells in bedrock is warranted. Note that installation of bedrock wells may not be recommended, if any of the following site conditions are observed while drilling through overburden during the Phase I program:

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

- There is a sufficient presence of groundwater, within the overburden formation for collection of groundwater samples for the analytical program.
- Visual or olfactory observations of significant, or "gross" contamination as defined by the DEC are noted in the overburden soils and as such, drilling into bedrock may create a pathway for deeper vertical migration of contaminants.
- A confining layer is encountered (e.g., clay soils, dense glacial "till") which would impede vertical migration of contaminants.
- Drilling has advanced to a maximum depth of 70 feet, which corresponds to the approximate lowest bottom elevation of Butternut Creek in the vicinity (~600 feet east of) the Site Characterization (SC) work area.

The above tasks are described in detail in Sections 5.0 through 13.0. The field investigation program will be performed in accordance with the procedures outlined in the project *Quality Assurance Project Plan* (QAPP) and *Investigation-Derived Wastes* (*IDW*) *Management Program* in Appendices 6 and 7, respectively.

Modifications to the scope of work may be proposed by Alpha-Omega, or recommended by the DEC based on field observations during the soil boring program. Accordingly, a certain amount of flexibility is warranted with respect to the final boring locations and is reflected in descriptions of the subsurface investigation efforts within this work plan. TDK will inform the DEC project manager of recommended adjustments to the soil boring/analytical program, as/if applicable and as expeditiously as practicable.

5.0 MAPPING PROGRAM

Topographic information which has been obtained from Alpha-Omega, to-date⁵, in combination with available historic reports [Section 14.0] provides the basis for the preliminary soil boring and monitoring well placements shown on the *Site Characterization Plan* [*Sheet SC-1*, Appendix 1].

5.1 Site Topography & Drainage Patterns

Historic stockpiling, excavation and grading operations have resulted in localized variances in topography throughout the Site area, however the ground surface generally slopes downward to the southeast, toward the ponds/wetlands and drainage swale (tributary to Butternut Creek). Localized groundwater flow would similarly be expected to range from south to southeast.

⁵ Ref: Alpha Pit Filling and Grading – Overall Site Plan [Sheet L1.0], prepared by Keplinger Freeman Associates, dated May 29, 2020.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

The impact of the reported groundwater "mound" in the vicinity of the larger pond, with respect to groundwater flow through the overburden soils will be further assessed during the subsurface investigation (see below).

5.2 Expanded Site Reconnaissance

The mapping program will include a focused search for a historic groundwater monitoring well that was reportedly installed adjacent to the 3-acre pond/wetland in 1985. If found and accessible, the well may potentially be incorporated into the groundwater sampling program.

6.0 AREAS OF CONCERN

Based on the historic records search and site mapping information that has been available to-date [Sections 2.0, 3.0 and 5.0], the following Areas of Concern (AOCs) have been identified within the Site.

- Former waste storage area adjacent to the former kiln location and main plant building.
- Former "landfill" area. Based on available information, it appears likely that the storage tanker which had been removed in the mid-1980s had been buried in this area.
- Former machine shop area near the eastern property boundary.
- Former lagoon area near the southern property boundary.

Contaminants that have been associated with the AOCs include volatile organic compounds (e.g., solvents), semi-volatile organic compounds (e.g., fuel oil), regulated metals and PCBs. Historic cement plant operations that reportedly have contributed to the on-site contamination include importation of hazardous wastes as a kiln fuel source and related storage and handling of these materials. Other potential sources of regulated constituents include equipment maintenance operations (e.g., within the machine shop), storage of coal and the use of electrical equipment containing PCB oils.

The approximate locations of the above AOC's are indicated on the *Site Characterization Plan* [Sheet SC-1, Appendix 1]. Note that these can only be considered as rough, general limits of confirmed or suspected contaminated zones, based on the information that is currently available. The Site Characterization will provide more specific information concerning the identification and limits of these areas.

7.0 SAMPLING AND ANALYSIS PROGRAM (PHASE I – OVERBURDEN INVESTIGATION)

7.1 Overview

A total of eight (8) overburden soil borings will be advanced on the Site, within or adjacent to the AOCs identified in Section 6.0 and subject to field modifications. At this time it is anticipated that four of the

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

borings will be converted into groundwater monitoring wells. The locations of the borings/wells are shown on the *Site Characterization Plan* [*Sheet SC-1*, Appendix 1].

The locations of the borings/wells may be subsequently modified, based on buried utility markings (e.g., Dig-Safely, NY) and/or subsurface observations made during the drilling program (e.g., discoveries of former waste disposal areas, leach fields, heavily contaminated zones), as/if applicable.

The proposed locations of six (6) surface water and sediment samples along the pond/wetland edges are also shown on *Sheet SC-1*.

Field sampling will be conducted by TDK personnel and/or TDK's sampling subcontractor(s). The analytical program, including preparation of the Category B deliverables reporting package will be completed by a laboratory certified under the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

The drilling program relative to advancement of the borings and construction of the groundwater monitoring wells is described in Sections 7.2 and 7.3. A summary of the samples to be collected, including sample selection rationale, analytical methods/parameters, standards, criteria and guidance (SCG) and reporting program are provided in Sections 7.4 through 7.7.

Specific field sampling procedures, including labeling, documentation, storage and shipping are described in the *Quality Assurance Project Plan (QAPP)* [Appendix 6]. A description of the data quality objectives (DQOs) and field/laboratory procedures to be implemented to achieve the DQOs are also provided in the QAPP.

7.2 Soil Boring (Drilling) Program

The soil boring program will consist of the following elements:

General

- Contacting of Dig-Safely, New York (DSNY-811) for the marking of public utilities and applicable services and coordinating the marking of private utilities with the property owner.
- A mobile drill rig(s) will be utilized to advance the soil borings. The rig shall be equipped with a percussion (i.e., Geoprobe) or drop hammer soil sampler and will also have auger drilling capabilities.
- The drilling spoons, rods and/or augers will be decontaminated (i.e., steam-cleaned) during drilling operations as described in the *Decontamination Program* [Appendix 4].

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

• Drill cuttings will be managed as described in the *Investigation-Derived Waste (IDW) Management Program* [Appendix 7].

Soil Borings:

- The overburden soil borings will be advanced to estimated depths ranging from 20 feet below ground surface (bgs) adjacent to the pond to approximately 60+ feet bgs. It is anticipated that the deeper borings will be advanced until refusal is encountered (e.g., bedrock or dense "glacial till"), a minimum of approximately five feet below the groundwater surface or a maximum depth of 70 feet, whichever is shallower.
- A field engineer with environmental/geotechnical experience will be on-site to observe the
 drilling program, collect representative soil samples and document the subsurface profile and
 water table information. Visual or olfactory suggestions of contamination, such as obvious
 odors, discoloration and/or presence of non-aqueous phase liquid (NAPL) will also be
 documented.
- Soil samples will be obtained during drilling using 2-inch outside diameter by 24-inch long steel "split-spoons". In general, the sampling interval will be continuous (i.e., every 2 feet) from ground surface to a depth of approximately 15 feet bgs and at standard (i.e., 5-foot) intervals at depths below 15 feet. These may be field-modified, depending on subsurface conditions.
- Representative soil samples shall be collected as described in the *Quality Assurance Project Plan* (*QAPP*) [Appendix 6] and sample depths will be indicated on the soil boring logs. A typical soil boring log is provided in Appendix 2.
- The borings will be backfilled with drill cuttings (if not grossly contaminated), as indicated in Section 12.0 and Appendix 7 and supplemented with sand as/if needed to a depth of 24-inches below ground surface. The cuttings/sand will be covered with 12 inches of hydrated bentonite pellets topped with 12 inches of sand.

7.3 Groundwater Monitoring Well Construction

- The overburden monitoring well depths are anticipated to range from approximately 20 feet bgs (adjacent to the wetland/ponds) to 70 feet bgs (e.g., top of bedrock or confining layer to be determined).
- A drill rig will be utilized to install the wells with 41/4-inch diameter hollow-stem augers.
- The wells will be 2-inch diameter (PVC), with 10-slot (0.010-inch aperture opening) screened sections extending above and below the groundwater surface. The screens will surrounded by filter sand compatible with the screen size (e.g., Morie #1), and bentonite (clay) seals will be Page 9 of 17

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

provided over the sand packs. Refer to the *Overburden Monitoring Well Construction Detail* [Appendix 3] for additional information.

• Note that if dense non-aqueous phase liquid (DNAPL) is identified or suspected on top of an aquitard during drilling, a relatively short (i.e., 5 feet or less) screened section will be installed directly on top of this soil unit.

Well Head Protection

- It is anticipated that the monitoring wells will be provided with minimum 4-inch diameter steel "stick-up" protective casings with locked covers. Disturbed ground, pavement or concrete surrounding the wells heads will be restored using minimum 18-inch diameter by 4-inch thick concrete collars.
- Compression caps with locks are to be provided for the tops of the monitoring well riser pipes.
- Refer to the *Monitoring Well Construction Detail* [Appendix 3] for additional information.

Well Development

- Each well will be developed using a submersible or peristaltic pump operating at a "low flow" condition, and/or manual bailing. Each monitoring well will be pumped/bailed until the discharge is "clear" (visible fines are minimized) or maximum of one hour, whichever is less.
- Well development water will be contained in 55-gallon drums and managed in accordance with the *IDW Management Program* [Appendix 7].

Surveying Program

- Upon completion of the monitoring well installations, the PVC rims of the wells will be surveyed relative to the Site topographic survey datum, such that a groundwater contour map (i.e., flow direction) can be generated based on "static" water levels. Refer to the *QAPP* [Appendix 6] for additional information.
- The horizontal and vertical positionings of the soil borings/monitoring wells will also be surveyed, for inclusion on the *Site Characterization Plan* [*Sheet SC-1*, Appendix 1].

7.4 Analytical Methods / Parameters

The analytical parameter lists and quantitative limits relative to the soil, groundwater, surface water and sediment samples are listed below:

Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's) and PCB's:

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

- Target compound list (TCL) per Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Multi-Media, Multi Concentration, in effect as of the date the analysis is performed.
- Thirty (30) highest concentration tentatively identified compounds (TICs), consisting of 10 VOCs and 20 SVOCs (Ref: DEC DER-10).

Metals:

• Target analytical list (TAL) per EPA CLP Statement of Work for Inorganic Analysis, Multi-Media, Multi Concentration, in effect as of the date the analysis is performed.

Per- and Polyfluoroalkyl Substances (PFAS) and 1,4-Dioxane:

- DEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Appendix G PFAS Analyte List [Draft, June 2022].
- 1,4-Dioxane

7.5 Sampling Rationale

The proposed soil boring, groundwater monitoring well and sediment sample locations are shown on the *Site Characterization Plan* [*Sheet SC-1*, Appendix 1]. In general, sample analyses and depth selections will be based on the following criteria. Note that the criteria may be field-modified, depending on subsurface conditions observed during the drilling and/or sampling programs:

Overburden Soil Borings

The following split-spoon soil samples, from each boring will be submitted for laboratory analysis:

VOCs:

- A representative sample from the split-spoon exhibiting the relatively highest photoionization detection (PID) meter response will be submitted for analysis.
- If no PID responses are obtained, a sample from the shallowest split spoon with a recoverable quantity (e.g., 0-2 feet) spoon will be submitted for analysis, in consideration of most likely exposure pathways (i.e., inhalation of airborne contaminants or dermal contact) based on current site conditions.

SVOCs:

• A representative sample from the split-spoon exhibiting (1) visibly stained (e.g., dark, petroleum-like) soils or (2) the relatively highest PID response will be submitted for analysis.

Alpha Portland (Otisca Industries) Site DEC Site No. 734006 TDK Project No. 2021063

May 12, 2022 [Revised September 16, 2022]

• If no stained soil is present and no PID response is obtained, a sample from the shallowest split spoon with a recoverable quantity (e.g., 0 - 2 feet) will be submitted for analysis, in consideration of the most likely exposure pathway (i.e., dermal contact) based on current site conditions.

Metals:

- A representative sample from the split-spoon exhibiting visibly stained soils will be submitted for analysis.
- If no stained soil is present, a sample from the shallowest (0 − 2 feet) spoons will be submitted for analysis, in consideration of the most likely exposure pathway (i.e., dermal contact) based on current site conditions.

PCBs:

- A representative sample from the split-spoon exhibiting (1) visibly stained (e.g., dark, petroleum-like) soils or (2) relatively highest PID response will be submitted for analysis.
- If no stained soil is present and no PID response is obtained, a sample from the shallowest (0 2 feet) spoons will be submitted for analysis, in consideration of the most likely exposure pathway (i.e., dermal contact) based on current site conditions.

PFAS and 1,4-Dioxane:

• A sample from the shallowest (0-2 feet) spoons will be submitted for analysis, in consideration of the most likely exposure pathway (i.e., dermal contact) based on current site conditions.

Groundwater

- Groundwater samples will be submitted for VOC, SVOC, Metals, PCB and PFAS/1,-Dioxane analysis.
- VOC samples will be obtained from as high in the water column as practicable, for evaluation of potential soil vapor intrusion (SVI) considerations.

Surface Water

• Surface water samples will be submitted for VOC, SVOC, Metals, PCB and PFAS/1,-Dioxane analysis.

Sediment Samples

• Sediment samples will also be submitted for VOC, SVOC, Metals, PCB and PFAS/1,-Dioxane analysis.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

Refer to the *Summary of Sample Locations and Parameters* table [*Table SC-1* on *Sheet SC-1*, Appendix 1] and the *Quality Assurance Project Plan (QAPP)* [Appendix 6] for a summary of sample locations/analytical parameters and collection methodologies, respectively.

7.6 Standards, Criteria and Guidance

The analytical results will be compared to the following standards, criteria and guidance (SCG) documents, as applicable:

Soil and Sediment:

- New York Codes, Rules and Regulations, Title 6 (6NYCRR), Chapter IV, Subpart 375-6: Remedial Program Soil Cleanup Objectives.
- DEC *CP-51 / Soil Cleanup Guidance*, Issued October 21, 2010.
- DEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) [Draft, June 2022].

Groundwater and Surface Water:

- 6NYCRR Chapter X, Part 703: Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations.
- DEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998.
- DEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) [Draft, June 2022].

7.7 Reporting

Analytical results will be reported in accordance with the DEC's Analytical Services Protocol (ASP) Category B deliverables criteria.

8.0 BEDROCK MONITORING WELL INSTALLATIONS (FUTURE – PHASE II IF REQUIRED)

If bedrock monitoring wells are installed, it is anticipated that the overburden and bedrock wells will be positioned in a "cluster" configuration, with roughly a 10 to 20-ft separation distance between the wells. The bedrock monitoring well identifiers will end with a "B" (i.e., MW-1B, MW-2B, etc.). Drilling considerations associated with advancement of the borings vertically into bedrock and construction of monitoring wells within the bedrock formation are summarized below:

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

8.1 Methodology

Construction of the bedrock wells will include the following elements:

- The borings will be advanced through the overburden to the top of bedrock utilizing 6¼-inch inside diameter hollow-stem augers.
- An approximately 2-foot deep "socket" will be advanced into the bedrock utilizing either a 6-inch diameter roller bit or an air hammer. A 4-inch diameter steel isolation casing will be set into the borehole socket.
- Concrete and/or bentonite grout will be applied to the annular space between the outside of the casing and borehole limits, utilizing a tremie pipe in conjunction with removal of the augers. The grout will be allowed to set (typically 12 to 24 hours) before resuming drilling operations.
- The boring will be advanced further into bedrock, through the 4-inch isolation casing utilizing a roller bit and compressed air as the drilling/cooling fluid.
- Rock and soil fragments will be recovered into a containment tub and subsequently transferred to 55-gallon drums for management in accordance with the Investigation-Derived Waste Management Program [Appendix 7].
- A 2-inch diameter PVC monitoring will be installed through the isolation casing, with the bottom of the screen set approximately five (5) feet below the groundwater surface. The primary purpose of the screen is to guard against intrusion of rock fragments, which can potentially limit the depth of the borehole and interfere with the collection of water samples.
- A sand pack filter will be installed around the screen as practicable, however it is anticipated that the disturbed shale bedrock fragments may collapse around the screen in lieu of some or all of the sand filter pack.

Refer to the *Bedrock Monitoring Well Construction Detail* in Appendix 3 for additional information.

9.0 CONTINGENCY PLAN

If a contamination "source" (e.g., underground storage tank, drums) is encountered during the investigation, work in the area shall be suspended pending the following:

- The DEC Project Manager is notified of the condition.
- Sufficient equipment and personnel are mobilized to the Site to address the condition.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

• Any tank(s) that is encountered shall be registered / closed in accordance with the DEC's Petroleum Bulk Storage (PBS) or Chemical Bulk Storage (CBS) programs, as applicable.

If reportable quantities of petroleum product or chemicals are evident, the DEC's Spills Hotline will also be notified.

10.0 SOIL VAPOR INTRUSION CONSIDERATIONS

The former cement plant buildings are abandoned and open to outside air flow. In addition, the available analytical data to-date has indicated relatively low levels of constituents of concern with respect to soil vapor intrusion (SVI). As such, no specific SVI evaluation program, beyond the field (PID) screening of soil samples and laboratory analysis of upper groundwater column samples for volatile organic compounds (VOCs) is proposed at this time.

The analytical data and subsurface soil profile information from the SC investigation will be assessed with respect to additional SVI-specific investigation measures, as/if warranted.

11.0 SC INVESTIGATION REPORT

The Site Characterization (SC) information will be compiled into a report which will include a discussion of the following:

- Nature and extent of contamination within the previously known/suspected AOCs, in addition to any other areas that may be identified during the field work.
- Description of field and analytical procedures and observations.
- Discussion of the nature and rationale for variances from the scope of work described within the SC work plan (e.g., modifying soil boring locations).
- Comparison of analytical data to Standards, Criteria and Guidance (SCG), as applicable.
- Site geologic and hydrogeologic characteristics, with respect to contaminant fate and transport and including groundwater flow direction(s).
- Elevations of groundwater surface at monitoring wells, well construction features (e.g., top and bottom of screens) and contaminated zones relative to the Site survey datum.
- Supporting documentation such as soil boring logs, groundwater field sampling logs, updated Site plans, analytical reports, including the Category B deliverables package and data summary tables.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

- Waste characterization results, and disposal documentation (e.g., manifests, weight tickets) for investigation-derived wastes (IDW), as applicable.
- Conclusions and recommendations summarizing the locations and approximate extent of Areas of Concern (AOC), residual contaminant levels and recommendations concerning potential implementation of an expanded subsurface investigation (e.g., including installation of bedrock wells), if warranted.

12.0 Management of Investigation-Derived Wastes

Investigation derived wastes (IDW) will consist of drill cuttings from the soil borings, equipment decontamination water, well development and purge water, spent disposable sampling equipment and personal protective equipment (PPE). These wastes will be managed in accordance with the procedures described in the *IDW Management Program* [Appendix 7].

13.0 HEALTH AND SAFETY PLAN

A Draft site-specific health and safety plan (HASP) relative to TDK employees is included in Appendix 8. Note that the drilling and laboratory service contractors typically have their own HASPs for on-site operations, which may be incorporated into an overall site-specific HASP, as applicable.

14.0 COMMUNITY AIR MONITORING PROGRAM (CAMP)

A Community Air Monitoring Program is included in Appendix 9.

15.0 REFERENCES

References which formed the basis for the scope of work described within this Site Characterization Work Plan included, but were not limited to the following:

- Letter from NYS Region 7 Environmental Quality Office to Mr. Neil Gingold & Gingold, dated April 19, 1983. (Re: Inspection of Alpha Plant)
- Letter report, summary of analytical data, well logs and site sketch from Galson Technical Services, Inc. to Mr. Clay Smith of Otisca Industries, dated April 16, 1985.
- Letter report and summary of analytical data from Galson Technical Services, Inc. to Mr. Clay Smith of Otisca Industries, dated May 10, 1985.
- Letter report from Keith Schimel, Ph.D., P.E. to Mr. Joseph Galloway of DEC, dated November 5, 1986. (Re: Alpha Site Meeting)
- Alpha Portland Cement Co. Site Closure Work Plan, prepared by Keith Schimel, Ph.D., P.E., dated April 1987.

ALPHA PORTLAND (OTISCA INDUSTRIES) SITE DEC Site No. 734006 TDK Project No. 2021063 May 12, 2022 [Revised September 16, 2022]

- Letter report from Keith Schimel, Ph.D., P.E. to Mr. George Heitzman of DEC, dated October 20, 1987. (Re: Disposal Documentation)
- DEC letter to Ms. Phyllis Burton of 6405 East Seneca Turnpike, dated June 21, 1988.
- Letter from Paul L. Sherman, P.E. to DEC, dated May 6, 1991. (Re: Mined Land Permit Application)
- Final Site Inspection Report Alpha Portland Cement, Jamesville, New York, prepared by Roy F. Weston, Inc., dated February 11, 1994.
- Laboratory Analysis Report prepared by Environmental Laboratory Services AST Oil (Samples Obtained January 7, 2009).
- Waste Management *Generator's Hazardous Waste Profile Sheet*, signed by John Murphy of Alpha Jamesville Corp., dated January 29, 2009. (for disposal of PCB Oil)
- Laboratory Analysis Report prepared by Life Science Laboratories, Inc., dated March 2009. (Clinker/CKD sampled for PCBs).
- Summary of Non Hazardous Waste Manifests, Acknowledgements of Disposal and Certificates of Acceptance prepared by Op-Tech Environmental Services, LLC, dated April 1, 2009. (disposal of materials contaminated with oil/grease)
- Proposed Characterization Sample Locations and PCB Screening Sample Locations plans prepared by O'Brien & Gere, dated June 2009.
- Cement Kiln Dust (CKD) Characterization Plan prepared by O'Brien & Gere and submitted to DEC, dated November 6, 2009.
- DEC Second Modified Schedule for Compliance for Consent Order Case No. R7-20080603-53 to Alpha Jamesville Corporation, dated April 1, 2010.
- DEC Letter to Mr. John Murphy of Alpha Jamesville Corp., dated December 27, 2013 (Approval of BUD No. 1084-7-34 CKD in Animal Bedding).
- Laboratory Analysis Report prepared by Test America, dated September 30, 2014. (CKD sampled metals, molybdenum and pH).
- Town of Dewitt, N.Y. Zoning Map 2008, prepared by O'Brien & Gere Engineers, Inc.

APPENDIX 1 REPORT FIGURES



