STATEMENT OF BASIS
FINAL CORRECTIVE MEASURES SELECTION

Eastman Business Park – South (EBP-S)
Former Kodak Building 514 Investigation Area
DEC Site No. 828177
Town of Greece
Rochester, Monroe County
NYSDEC Order on Consent Index #CO 8-2011-10022
March 2014

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT – STATEMENT OF BASIS
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Eastman Business Park – South (EBP-S)
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Statement of Purpose and Basis

This document presents the selected final corrective measures for the former Kodak Building 514 Investigation Area, which was historically owned and operated by Eastman Kodak Company. The remedial program was chosen in accordance with the NewYork State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 373.

The proposed remedy selection was made available for public comment between January 23, 2014 and February 28, 2014. There were no comments received from the public on the corrective measures proposed in the proposed Statement of Basis (SB). Although no comments were received, a Responsiveness Summary, that includes additional information about public participation activities, is included in Appendix A of this final Statement of Basis.

This decision is based on the Administrative Record for the New York State Department of Environmental Conservation (the Department) for the former Kodak Building 514 Investigation Area of Eastman Kodak Company's Eastman Business Park, included in Appendix B of the Statement of Basis.

Description of Selected Remedy

The proposed remedy addresses a release of chlorinated solvent into groundwater. The release occurred in the vicinity of Building 514, a building that was historically owned by Kodak and used for manufacturing operations. The remedy includes further actions to address impacts to groundwater, monitoring, and controls on future use of the site.

The elements of the selected remedy are as follows:

For groundwater, the remedy involves monitoring and assessment of contaminated groundwater. Monitoring will be performed to assess groundwater conditions and track the expected continued

degradation of the contaminants, and reduced concentrations in the groundwater. The testing will be used to assess the effectiveness of the action and to ensure that the remedy remains protective during future use of the site.

No response actions are required for soils since no source material was identified during site investigations. However, the remedy includes institutional controls on future use, including excavation controls regarding management of excavated soils, and soil vapor intrusion assessment requirements in relation to future site development. These elements of the remedy will be embodied in a site management plan, along with reporting and certification requirements to ensure that the remedy remains protective during future use of the site.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 6, 2014

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

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SECTION 1: INTRODUCTION

The New York State Department of Environmental Conservation (Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Statement of Basis (SB) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Hazardous Waste Management Program (also known as the RCRA Program) requires corrective action for releases of hazardous waste and hazardous constituents to the environment. This facility is subject to this regulatory program. The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Parts 373 (RCRA). This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

NYSDEC Region 8 Office
6274 E. Avon-Lima Road
Avon, NY 14414
Call 585-226-2466 for Appointment

NYSDEC Central Office
625 Broadway – 12th Floor
Albany, NY 12233-7017
Call 518-402-9813 for Appointment

Information about the comment period and citizen participation actions for this site is summarized in the responsiveness summary section of the Statement of Basis (see **Appendix A**).

Receive Site Citizen Participation Information by Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html.

SECTION 3: SITE DESCRIPTION AND HISTORY

Location - The Building 514 Investigation Area (B-514) encompasses the building formerly known as the Eastman Kodak Global Manufacturing Technology Shop. The site is located on the western edge of the City of Rochester, on the west side of Mount Read Boulevard, in an area referred to as Eastman Business Park (EBP) Section S (EBP-S). The site location is shown on Figure 1.

Site Features – The Building 514 parcel (formerly a part of the KPS area of Kodak Park) consists of 21.1 acres. The majority of the B-514 Area is located in the Town of Greece, Monroe County. Approximately 4.5 acres of the site is located in the City of Rochester. B-514 was constructed in the 1950s with an initial footprint of approximately 117,520 square feet. Several expansions have occurred so B-514 is currently a one–story structure built on a concrete slab and encompasses approximately 189,482 square feet. Building 515, formerly located on the west side of B-514, was demolished in 2004, but the building slab remains in place. Building 516, located southwest of B-514, provides utility services (heating/cooling) to the site.

There is an access road with a secured gate located on the south side of B-514. A paved road traverses the south side of the property and provided access to other areas of the KPS section of EBP located to the west. A paved area abuts the north side of B-514. There is a cinder-based storage area located south of the High Bay area of B-514. To the east and south of B-514 and east and north of Building 516 there are several small landscaped areas. The northern portion of the site including the northwest corner of the property is undeveloped and covered with vegetation and trees. These site features are shown on Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

Current Zoning and Land Use - The site is currently zoned for industrial use and is actively being used for industrial purposes. The property was sold to J.C. Fibers in 2009, and is currently being used as a municipal solid waste transfer and recycling station.

Past Use of the Site – Building 514 was constructed in the 1950s and owned/operated by Consolidated Vacuum Corporation. It was used for vacuum equipment manufacturing. Kodak's Capital Management Organization/Shops Division purchased it in 1974 and used it for parts and machine manufacturing. An adjacent building, B-515, located on the west side of B-514, was constructed in 1975 and utilized by the Kodak Construction Division for warehouse space and as a maintenance facility until its demolition in 2004. B-516, located southwest of B-514, was constructed in 1982 and was used by the Kodak Shops Division for utilities/cooling system.
While owned and operated by Kodak, B-514 contained a machine shop, engineering and administrative offices. The principal operations and activities that were performed in B-514 during Kodak's ownership were described as follows:

- The southwest portion of the building contained the heavy metal shop where cutting, shaping, welding, and grinding was performed. This area contained metal punch presses, lathes, shears and shop blasting equipment including some plasma cutting tables;
- The northwest portion of the building was referred to as machine assembly (including a hopper department) where some lead weights were poured;
- The central portion of the building housed planers and milling machines;
- The east side of the building (facing Mt. Read Blvd.) housed the offices;
- A grinding department was located in the northeast portion of the building (including cylindrical grinders).

Site Geology and Hydrogeology – The site geology consists of a thin layer of glacially derived overburden soils, overlying shale bedrock. The overburden soils are typically heavy, poorly drained, low conductivity silts and clays, which range in thickness between 11 and 22 feet. The underlying bedrock is the Rochester Shale. The uppermost shale is typically highly weathered and clay-like. This interval is underlain by a less weathered interval that is fissile and exhibits considerable fracturing. The shale below this interval is dense, and competent, exhibiting a lower degree of fracturing. Groundwater is generally encountered at depths ranging from 2 to 8 feet below ground surface. The overburden and upper shale are hydraulically connected, with groundwater flow towards the east.

A site location map is attached as Figure 1 and a facility map is attached as Figure 2.

SECTION 5: ENFORCEMENT STATUS

Eastman Kodak Company (Kodak) is implementing the Corrective Action Program (CAP) for the Eastman Business Park in Rochester, New York. Eastman Business Park (EBP) is permitted as a hazardous waste treatment, storage, and disposal facility (TSDF) under New York State (NYS) hazardous waste regulations (6 NYCRR Part 373). Under this regulatory program, Kodak was implementing the Corrective Action process for individual solid waste management units (SWMUs), and groups of SWMUs, within EBP. CAP requirements include parcels that have been sold and may be under different ownership, yet Kodak retains the CAP responsibilities. The Building 514 (B-514) location is a case where the parcel had Kodak CAP requirements but is no longer under Kodak ownership. The requirements related to this parcel, including implementation of the selected remedy, were removed from Kodak's DEC Part 373 Permit and included in DEC Order on Consent Index # CO 8-2011-10022.

SECTION 6: SITE CONTAMINATION

6.1 Summary of the Site Investigation

The corrective action process began with evaluations and investigations to identify potential areas of the site that may have been impacted by hazardous wastes and/or hazardous constituents. Based on the results of investigations, the Department has determined that hazardous wastes and/or hazardous constituents have been released at B-514. The impact of releases of hazardous wastes and/or hazardous constituents at the facility were characterized and evaluated.

Kodak has performed environmental assessments and investigations that have characterized soil, soil vapor and groundwater in the B-514 area. A chronological listing of these assessments and investigations is provided in the Administrative Record (see **Appendix A**).

The analytical data collected for the facility includes data for:

- Soil
- Groundwater
- Soil Vapor
- Indoor Air
- Ambient Air

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the site investigations were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: Site Investigation Results

The data have identified contaminants of concern. A “contaminant of concern” is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Based on the results, the Department determined that corrective measures were required to address some of the areas investigated. The nature and extent of contamination and impacted environmental media are summarized in **Exhibit A**.

The contaminants of concern identified at this facility are:

- Trichloroethene (TCE)
- TCE Degradation/Breakdown Products [1,2-dichloroethene (1,2-DCE); Vinyl chloride (VC)]

As illustrated in **Exhibit A**, the contaminant(s) of concern exceed the cleanup objectives/guidance criteria for:

- Soil
- Groundwater
- Soil Vapor Intrusion

6.2: <u>Summary of Environmental Assessment</u>

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The reports listed in Appendix A present more a detailed discussion of existing and potential impacts from the site.

There is contamination in the groundwater in the overburden and upper bedrock zones, primarily by chlorinated volatile organic compounds (TCE and related breakdown products). TCE was detected at concentrations of up to 84 micrograms per liter (ppb) during 2012. The contamination does not extend off-site. The groundwater occurs in low conductivity materials (silts/clays and weathered shale) that provide low yields and generally exhibit groundwater that has poor natural quality due to high dissolved solids content. Because of these limitations, and the availability of municipal water, groundwater is not used as a source for potable water in the area.

There are no significant surface water features or wetlands in the vicinity of the site. The site is developed and in use for industrial purposes, so there is a low potential for wildlife receptors at the site. In addition, the contamination is not present at the ground surface, further reducing the potential for wildlife exposures.

Soil vapor intrusion (SVI) sampling detected contaminants in the sub-slab and indoor air at Building 514. During 2011, TCE was detected at concentrations up to 4,200 micrograms per cubic meter (ug/m^3) in sub-slab vapor and at a concentration of 2.5 ug/m^3 in the associated indoor air sample. Results have not required mitigation due to the current use of the site and building and the condition of the building's foundation. To ensure that exposures related to soil vapor intrusion remain under control, an interim SVI site management plan was developed for the site, and is a component of the proposed remedy. The plan addresses requirements for construction projects that involve sub-slab/foundation alterations.

6.3: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

People are not expected to come into direct contact with site-related contaminants in soil or groundwater because buildings and pavement most of the site and access to the site is restricted. People may come into direct contact with site-related contaminants if they dig below the surface on-site. People are not drinking contaminated groundwater associated with the site because the area is served by a public water supply that obtains its water from a different source not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying building and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been recommended to address the potential for on-site soil vapor intrusion in the event that the current use of the site changes. Sampling indicates that off-site soil vapor intrusion as a result of site contamination is not a concern.

6.4 Summary of the Remediation Objectives

The objectives for the corrective measures have been established through the remedy selection process. The goal of the corrective measures is to protect public health and the environment and achieve unrestricted use of the site to the extent feasible.
The remedial action objectives for this site are:

Soil
- Human Health
  - Prevent direct contact with contaminated soil

Groundwater
- Human Health
  - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
  - Prevent direct contact with, or inhalation of volatiles, from contaminated groundwater.
- Environment
  - Prevent expansion/offsite migration of the groundwater plume
  - Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil Vapor
- Human Health
  - Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a facility.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies, or resource recovery technologies to the maximum extent practicable. The remedy must address potential routes of exposure to humans and the environment and attain the cleanup objectives identified above. Potential remedial alternatives for the facility were identified, screened, and evaluated in the Alternatives Analysis/Presumptive Remedy Report.

Criteria that will be used to determine if the remedial action objectives are being achieved are presented in **Exhibit B**. A summary of the corrective measure alternatives that were considered for the facility is presented in **Exhibit C**. A summary of the estimated costs of the alternatives is included as **Exhibit D**. The basis for the Department's selected remedy is set forth in **Exhibit E**.

The selected remedy is referred to as the Building 514 Investigation Area remedy. The estimated present worth cost to implement the selected remedy is $167,000. There is no construction cost involved with implementation of the remedy. The estimated average annual cost is $10,200.

The elements of the selected remedy are:

1. Institutional Control - Imposition of an institutional control in the form of an environmental easement for the controlled property that:
   - requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls;
   - allows the use and development of the controlled property for commercial and industrial uses, although land use is subject to local zoning laws;
   - restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and,
   - requires compliance with the Department approved Site Management Plan.

2. Site Management Plan - A Site Management Plan is required, which includes the following:

   a. Institutional Control Plan that identifies all use restrictions/controls for the site and details the steps and media-specific requirements necessary to ensure the following controls remain in place and effective:

   - The environmental easement discussed in Paragraph 1 above;
   - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - A provision for evaluation of the potential for soil vapor intrusion issues in the event that there is a change in the use of the on-site structure(s), a new structure is to be constructed, or if there is a physical alteration of a building foundation that may result in increased SVI exposure potential.
   - provisions for the management and inspection of the identified controls;

- maintaining site access controls and Department notification;
- providing Department access to the site and remedial program records;
- financial assurance requirements (periodic updates of cost estimates and related financial instruments); and,
- the steps necessary for the periodic reviews and certification of the controls.

b. Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater and reporting to assess the performance and effectiveness of the remedy with respect to the RAOs; and,
- a schedule of monitoring and frequency of reporting to the Department.

3. Green Remediation - Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

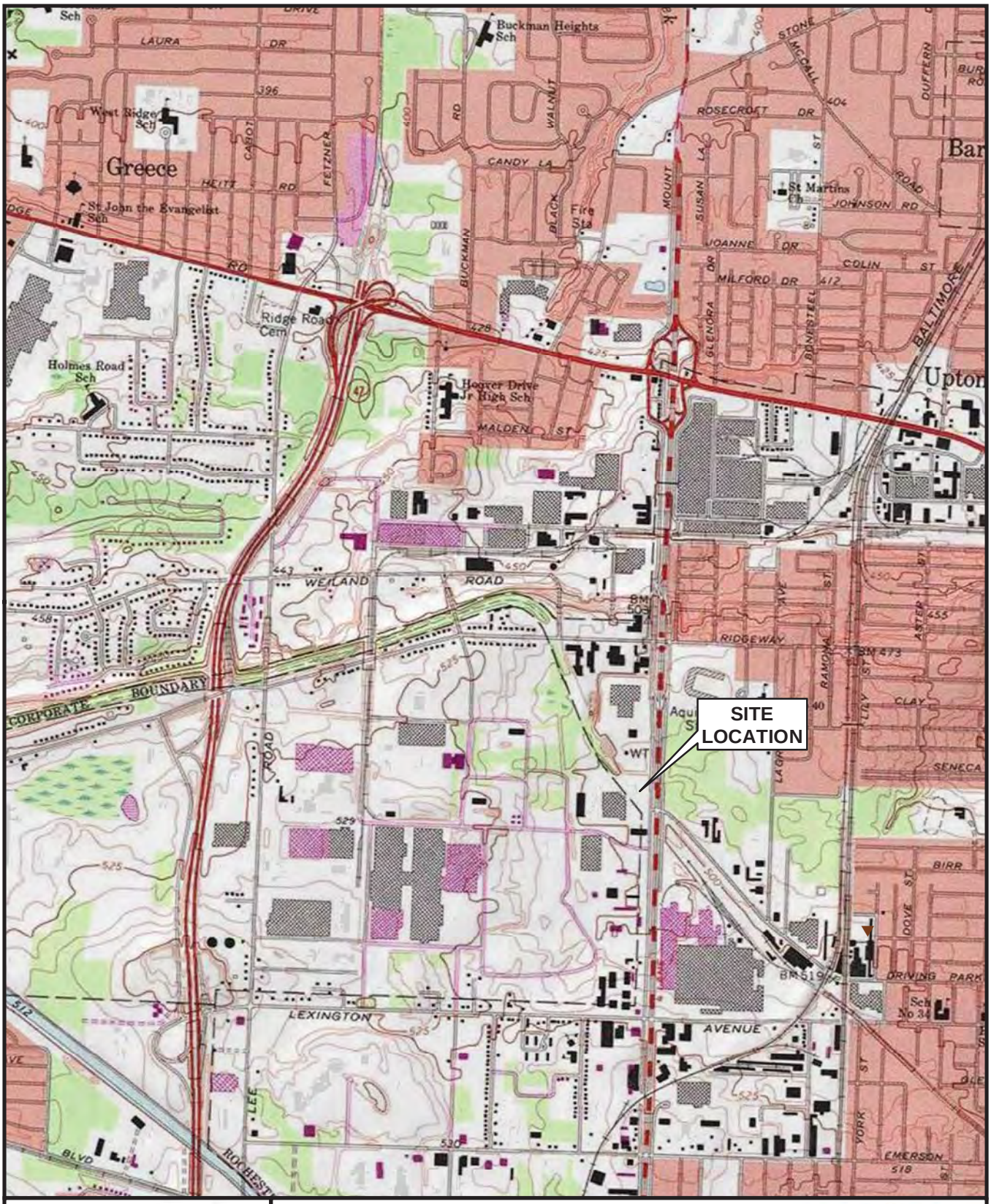

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Figure 1

Site Location Map

Eastman Business Park- South
Former Kodak Building 514 Area
Town of Greece, Monroe County
DEC Site No. 828177

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE

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Figure 2

Site Map

Eastman Business Park- South (EBP-S)
Former Kodak Building 514 Area
City of Rochester, Town of Greece, Monroe County
DEC Site No. 828177

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •

STATEMENT OF BASIS

Exhibits A through E

Eastman Business Park – South (EBP-S)
Former Kodak Building 514 Investigation Area
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March 2014

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the site investigations for all environmental media that were evaluated. As described in Section 5, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium, a table summarizes the findings of the investigation. The tables present the range of contamination found at the facility in the media and compares the data with the applicable Standard, Criteria, or Guidance (SCGs) for the facility. The contaminants are separated into categories by analyte groups: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and pesticides/ polychlorinated biphenyls (PCBs). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs are also presented.

Waste/Source Areas

The investigations at B-514 did not identify any discernible areas (localized hotspots) that could serve as an ongoing source of contaminants. Historic site operation information was evaluated during development of the environmental investigation plans for B-514. As part of this effort, the 6 solid waste management units at the site that were identified during the RCRA facility assessment were targeted for sampling. In addition, general site conditions were also assessed in conjunction with due diligence efforts. This included soil, groundwater, and soil vapor intrusion (SVI) structure sampling. Although investigations included suspect areas identified through this process, the results did not show the presence of significant waste/source areas at the site. Details of groundwater, soil, and SVI results are presented in the media-specific sections below.

Groundwater

Groundwater across the site and beneath B-514 exhibits impacts for trichloroethene (TCE) and TCE degradation byproducts (e.g., cis-1,2-dichloroethene [1,2-DCE] and vinyl chloride). The trends observed from monitoring events conducted between 2007 and 2009 show decreasing TCE concentrations and increasing concentrations of TCE degradation/breakdown products in downgradient monitoring wells. These trends indicate that natural attenuation and biological processes are contributing to the breakdown of TCE in the vicinity of B-514.

Groundwater quality data from June 2012 sampling event were compared to the SCGs. Exceedances for TCE were detected in approximately half of the monitoring wells sampled, including the new temporary wells. Where TCE exceeded the SCGs, the concentrations ranged from 5.6 to 84 ppb (ug/L). Benzene was detected slightly above the SCG in a temporary well located west of B-514. Two additional VOCs, 1,2-DCE and vinyl chloride, were detected slightly above the SCGs in wells located to the south of B-514. These breakdown compounds of TCE were detected in these wells in previous events. The detected compounds associated with locations monitored in June 2012 are presented on Figures A-1 and A-2. A summary of groundwater data for sampling conducted prior to 2012 is presented on Figure A-3.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)
VOCs		
Acetone	ND – 49	50
Benzene	0.3 – 2.9 [c]	1
2-Butanone (MEK)	1.4 – 81[c]	50
Carbon Disulfide	0.7 – 1.1	NV
Chloroform	2.4 – 11[c]	7
1,1-Dichloroethane	0.2 – 3.9	5
1,1-Dichloroethene	ND – 0.5	5
1,2-Dichloroethene	1.1 - 78	5
2-Hexanone	ND – 1.8	50
4-Methyl-2-Pentanone	ND – 1.2	NV
Methylene Chloride	ND – 2	5
Toluene	0.4 – 4.6	5
1,1,1-Trichloroethane	0.2 – 0.7	5
Trichloroethene	0.1 – 84	5
Vinyl Chloride	0.7 – 2.3	2
Xylene	1.3 – 2.5	5
SVOCs		
Acenaphthene	ND - 0.9	20
Anthracene	ND – 7	50
Fluorene	ND - 0.6	50
Napthalene	ND – 4	10
Diethyl phthalate	ND - 0.5	50
Bis(2-ethylhexyl)phthalate	1.6 – 11[d]	5
Phenanthrene	ND - 1.6	50

ND – Not Detected
The shaded compounds are considered contaminants of concern for this site.
a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5). NV = No Value listed in TOGS 1.1.1.
c – There was only 1 exceedance of the SCG for this constituent; it is not considered a contaminant of concern for this site.
d – This is a common laboratory contaminant and is not considered a contaminant of concern for this site.

Based on the findings of the site investigations, the presence of TCE has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: TCE and related degradation/breakdown products (1,2-DCE and vinyl chloride).

In June 2012 groundwater samples from the 19 permanent monitoring wells were analyzed for geochemistry and several other parameters that are used to assess whether conditions in the saturated zone are favorable to contaminant degradation via natural attenuation processes. Geochemistry analytes included nitrate, chloride, sulfate, bromide, alkalinity, chemical oxygen demand, total organic carbon, and the light hydrocarbons methane, ethene and ethane. Field parameters included oxidation-reduction potential and dissolved oxygen. Results indicated favorable conditions for natural attenuation of the site contaminants of concern, consistent with the widespread presence of TCE degradation/breakdown products observed at the site.

Soil

An extensive number of soil samples have been collected within the B-514 area. These investigations provided a characterization of the soils across the site, including those specifically associated with SWMUs. The soil sampling did not identify widespread impacts to soil or soils that would be likely to serve a continuing contaminant source area.

For VOCs, there was only one exceedance of the unrestricted SCGs (TCE at 4.9 ppm in soil boring B-01). This sample was collected by drilling through the building slab. There were no exceedences of the restricted use SCGs for VOCs.

For SVOCs, there were exceedances of the unrestricted use SCOs. However, only one location, SB514N, within the north loading dock area was identified as having analytical results for SVOCs exceeding the industrial use SCOs. This exceedance was in the sub-surface soils, at a depth of 3 to 4 feet below ground surface (bgs). The exceedances at SB14N were within the same order of magnitude of the Industrial SCOs, are located in the shallow unsaturated overburden, and are isolated in a confined area below a paved surface. Eastman Business Park as a whole has identified elevated levels of PAHs in soils that are believed to be the result of historic fill and not from waste management practices. Based on the current use of this property, conditions at SB514N do not represent an exposure concern.

For metals, there were no exceedances of the unrestricted SCGs.

For pesticides/PCBs, there was one minor PCB exceedance (0.3 ppm) of the unrestricted SCGs (0.1 ppm). There were no exceedances of the restricted use SCGs for PCBs.

A summary of soil results for samples collected prior to 2012 are shown on Figure A-4. Results from a supplemental sampling effort conducted in 2012 are shown on Figure A-5.

Table 2 - Soil

Detected Constituents	Concentration Range (ppm)[a, b]	Unrestricted SCG[c] (ppm)	Restricted Use SCG[d] (ppm) [Commercial]	Restricted Use SCG[d] (ppm) [Industrial]
VOCs				
Acetone	ND - 0.16B	0.05	500	1000
Carbon disulfide	ND - 0.0017	NV	NV	NV
Methylene chloride	ND - 0.053	0.05	500	1000
2-Butanone (MEK)	ND - 0.032	0.12	500	1000
Tetrachloroethene	ND - 0.011	1.3	150	300
Toluene	ND - 0.0015	0.7	500	1000
Trichloroethene	ND - 4.9	0.47	200	400
SVOCs				
Acenaphthene	ND – 14	20	500	1000
Anthracene	ND – 17	100	500	1000
Benzo(a)anthracene	ND - 29 {I}	1	5.6	11
Benzo(b)fluoranthene	ND - 30 {I}	1	5.6	11
Benzo(k)fluoranthene	ND - 7.9 {RR}	0.8	56	110
Benzo(g,h,i)perylene	ND – 15	100	500	1000
Benzo(a)pyrene	ND - 21 {I}	1	1	1.1
Chrysene	ND - 26 {C}	1	56	110
Dibenz(a,h)anthracene	ND - 4.5 {I}	0.33	0.56	1.1
Dibenzofuran	ND – 6	7	350	1000
Di-n-butyl phthalate	ND - 0.28	NV	NV	NV
Fluoranthene	ND – 68	100	500	1000
Fluorene	ND – 11	30	500	1000
Indeno(1,2,3-cd)pyrene	ND - 14 {I}	0.5	5.6	11
2-Methylnaphthalene	ND - 3.1	NV	NV	NV
Napthalene	ND - 5.3	12	500	1000
Phenanthrene	ND – 63	100	500	1000
Pyrene	ND – 48	100	500	1000
Pesticides/PCBs				
Aroclor-1248	ND - 0.024	0.1	1	25
Aroclor-1254	ND - 0.3	0.1	1	25

ND – Not Detected
NV – No Value listed in Part 375
a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil.
b - The nature of the SCG exceedance ({RR}-restricted residential; {C}-commercial; {I}-industrial) is indicated by constituent.
c - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives. For VOCs, the listed values are also Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health. Values for both Commercial and Industrial Use are presented.

As discussed above, there was only one soil sample that exceeded the unrestricted use criteria for the primary contaminants of concern (TCE) the during the site investigation.

The SVOC exceedances of the industrial SCGs were also from a single sample that appears to be associated with historic fill activity at the site. Historic fill containing ash, clinker, and coal may have resulted in soil concentrations above the restricted SCGs at this sample location. Therefore, the SVOC detections at this sample point are not considered site specific contaminants of concern.

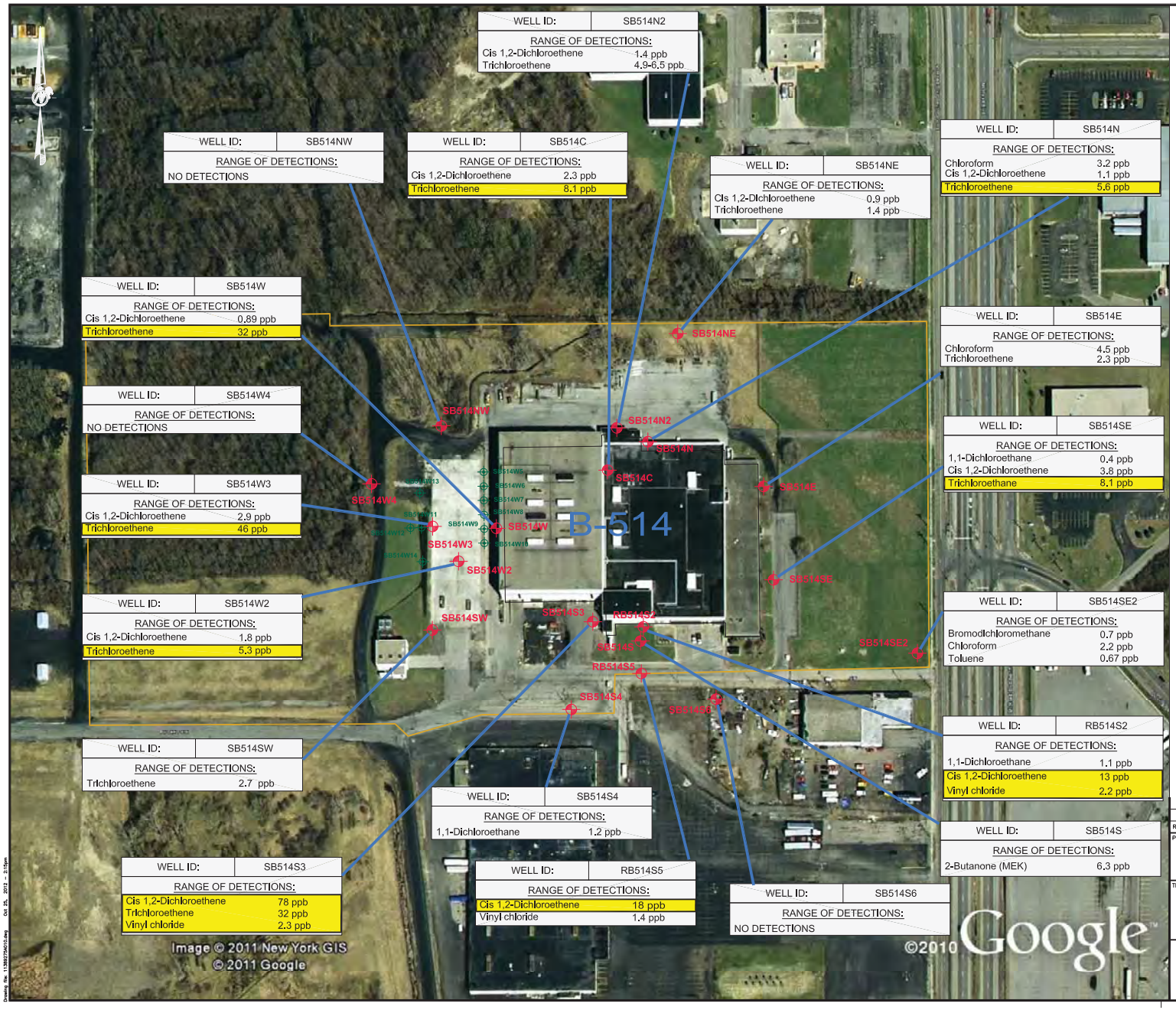
Although the results indicate soil conditions are suitable for the site's current commercial use, measures are needed to ensure that these soils are properly managed during future use of the site.

Soil Vapor

The evaluation of the potential for soil vapor intrusion (SVI) resulting from the presence of facility related soil or groundwater contamination was evaluated by the sampling of soil vapor, sub-slab soil vapor under structures, and indoor air inside structures. At this facility, due to the presence of a building in the impacted area, a full suite of samples were collected to evaluate whether actions are needed to address exposures related to soil vapor intrusion.

Several SVI testing events were conducted at Building 514 between 2007 and 2011. During 2011, TCE was detected at concentrations up to 4,200 micrograms per cubic meter (ug/m^3) in sub-slab vapor and at a concentration of 2.5 ug/m^3 in the associated indoor air sample. Results showed the presence of TCE and related compounds in the sub-slab soil vapor in the High Bay part of the building (see Figure A-6). The SVI results are consistent with groundwater results that indicated the presence of contaminated groundwater under the building.

Based on the concentrations detected, a source track-down effort was undertaken to attempt to identify preferential pathways through the foundation slab in the High Bay area of B-514 and to conduct a detailed sub-slab to indoor air pressure differential survey of the High Bay area. This effort was completed in 2011. Based on the results of this effort, there was not a need for active mitigation of the building. To ensure that conditions remain protective, an interim site management plan specific to soil vapor intrusion was developed for B-514. The purpose of the plan is to ensure that conditions within the building remain protective in the future.



WELL ID:	SB514N2
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	1.4 ppb
Trichloroethene	4.9-6.5 ppb

WELL ID:	SB514NW
RANGE OF DETECTIONS:	
NO DETECTIONS	

WELL ID:	SB514C
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	2.3 ppb
Trichloroethene	8.1 ppb

WELL ID:	SB514NE
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	0.9 ppb
Trichloroethene	1.4 ppb

WELL ID:	SB514N
RANGE OF DETECTIONS:	
Chloroform	3.2 ppb
Cis 1,2-Dichloroethene	1.1 ppb
Trichloroethene	5.6 ppb

WELL ID:	SB514W
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	0.89 ppb
Trichloroethene	32 ppb

WELL ID:	SB514E
RANGE OF DETECTIONS:	
Chloroform	4.5 ppb
Trichloroethene	2.3 ppb

WELL ID:	SB514W4
RANGE OF DETECTIONS:	
NO DETECTIONS	

WELL ID:	SB514SE
RANGE OF DETECTIONS:	
1,1-Dichloroethane	0.4 ppb
Cis 1,2-Dichloroethene	3.8 ppb
Trichloroethane	8.1 ppb

WELL ID:	SB514W3
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	2.9 ppb
Trichloroethene	46 ppb

WELL ID:	SB514SE2
RANGE OF DETECTIONS:	
Bromodichloromethane	0.7 ppb
Chloroform	2.2 ppb
Toluene	0.67 ppb

WELL ID:	SB514W2
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	1.8 ppb
Trichloroethene	5.3 ppb

WELL ID:	RB514S2
RANGE OF DETECTIONS:	
1,1-Dichloroethane	1.1 ppb
Cis 1,2-Dichloroethene	13 ppb
Vinyl chloride	2.2 ppb

WELL ID:	SB514S
RANGE OF DETECTIONS:	
2-Butanone (MEK)	6.3 ppb

WELL ID:	SB514SW
RANGE OF DETECTIONS:	
Trichloroethene	2.7 ppb

WELL ID:	SB514S4
RANGE OF DETECTIONS:	
1,1-Dichloroethane	1.2 ppb

WELL ID:	SB514S3
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	78 ppb
Trichloroethene	32 ppb
Vinyl chloride	2.3 ppb

WELL ID:	RB514S5
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	18 ppb
Vinyl chloride	1.4 ppb

WELL ID:	SB514S6
RANGE OF DETECTIONS:	
NO DETECTIONS	

LEGEND

- MONITORING WELL
- NEW GROUNDWATER SAMPLE LOCATIONS (SEE REFERENCE 2)
- ASSESSMENT AREA OUTLINE
- Trichloroethene 5.6 ppb — EXCEEDANCE OF TOGS 1.1.1 OR 6-NYCRR PART 703 VALUES

NOTES

1.) SHADED PARAMETERS INDICATES NYSDEC SECTION 703.5 WATER QUALITY STANDARD WAS EXCEEDED WAS IN WELL.

2.) GROUNDWATER DATA REPRESENTS SAMPLE RESULTS FROM THE JUNE 2012 SAMPLING EVENT.

REFERENCES

1.) IMAGE LICENSED FROM GOOGLE EARTH PRO 2010.

2.) NEW GROUNDWATER SAMPLE LOCATIONS AND WELL SB514SE2 SURVEYED BY PASSERO ON JUNE 27, 2012.

100 0 100 200
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
BUILDING 514 AREA INVESTIGATION SUMMARY
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

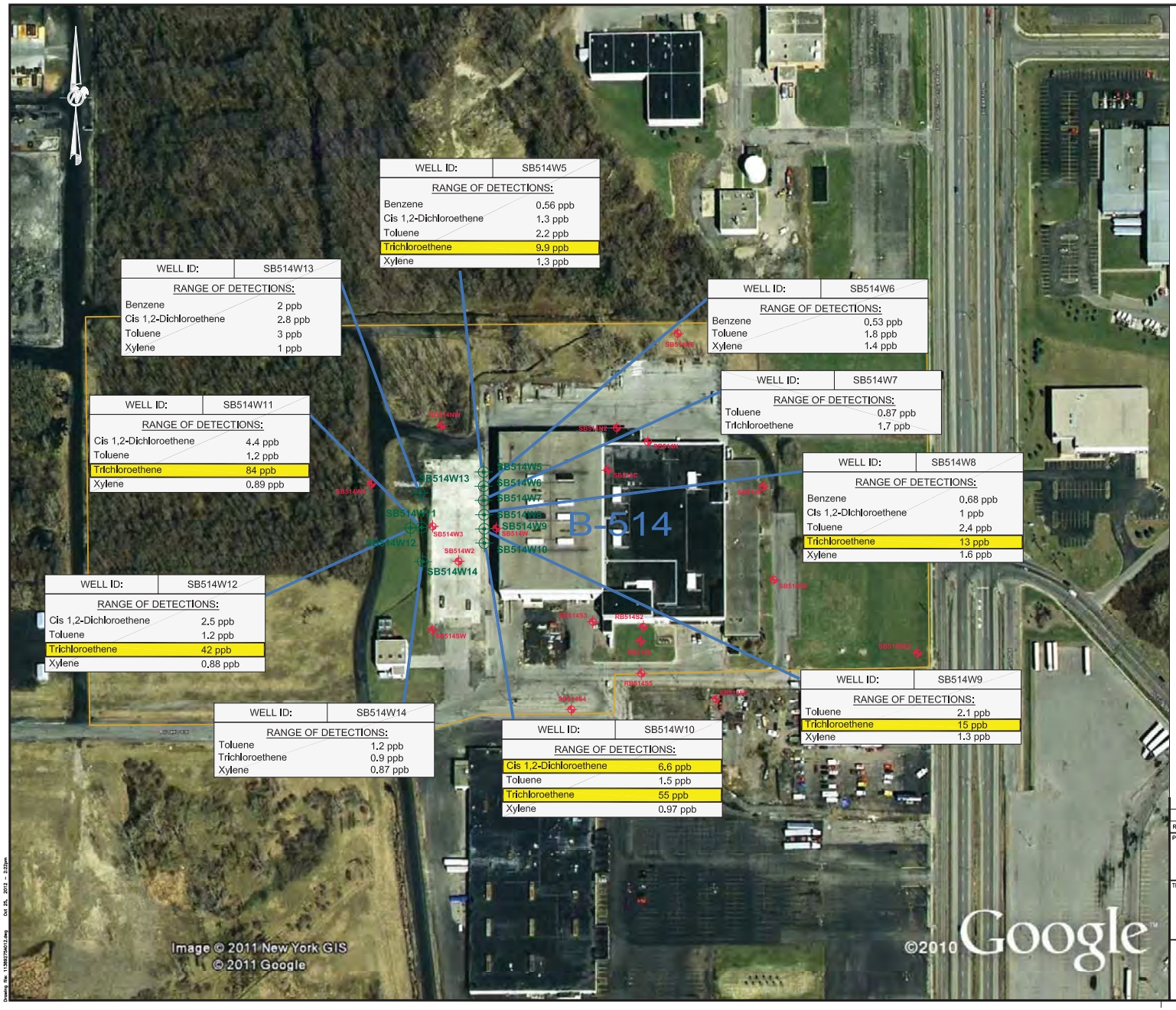
TITLE
SUMMARY OF GROUNDWATER INVESTIGATION DATA - PERMANENT WELLS - JUNE 2012

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	113-89275	FILE No.	11389275A010
DESIGN	PTM 08/20/12	SCALE	AS SHOWN REV. 0
CADD	AML 09/20/12		
CHECK			
REVIEW			

Figure A-1

Drawing file: 11389275A010.dwg Oct 25, 2012 - 2:15pm



WELL ID:	SB514W5
RANGE OF DETECTIONS:	
Benzene	0.56 ppb
Cis 1,2-Dichloroethene	1.3 ppb
Toluene	2.2 ppb
Trichloroethene	9.9 ppb
Xylene	1.3 ppb

WELL ID:	SB514W13
RANGE OF DETECTIONS:	
Benzene	2 ppb
Cis 1,2-Dichloroethene	2.8 ppb
Toluene	3 ppb
Xylene	1 ppb

WELL ID:	SB514W6
RANGE OF DETECTIONS:	
Benzene	0.53 ppb
Toluene	1.8 ppb
Xylene	1.4 ppb

WELL ID:	SB514W11
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	4.4 ppb
Toluene	1.2 ppb
Trichloroethene	84 ppb
Xylene	0.89 ppb

WELL ID:	SB514W7
RANGE OF DETECTIONS:	
Toluene	0.87 ppb
Trichloroethene	1.7 ppb

WELL ID:	SB514W8
RANGE OF DETECTIONS:	
Benzene	0.68 ppb
Cis 1,2-Dichloroethene	1 ppb
Toluene	2.4 ppb
Trichloroethene	13 ppb
Xylene	1.6 ppb

WELL ID:	SB514W12
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	2.5 ppb
Toluene	1.2 ppb
Trichloroethene	42 ppb
Xylene	0.88 ppb

WELL ID:	SB514W9
RANGE OF DETECTIONS:	
Toluene	2.1 ppb
Trichloroethene	15 ppb
Xylene	1.3 ppb

WELL ID:	SB514W14
RANGE OF DETECTIONS:	
Toluene	1.2 ppb
Trichloroethene	0.9 ppb
Xylene	0.87 ppb

WELL ID:	SB514W10
RANGE OF DETECTIONS:	
Cis 1,2-Dichloroethene	6.6 ppb
Toluene	1.5 ppb
Trichloroethene	55 ppb
Xylene	0.97 ppb

LEGEND

- MONITORING WELL
- NEW GROUNDWATER SAMPLE LOCATIONS (SEE REFERENCE 2)
- ASSESSMENT AREA OUTLINE
- Trichloroethene 15 ppb — EXCEEDANCE OF TOGS 1.1.1 OR 6-NYCRR PART 703 VALUES

NOTES

1.) SHADED PARAMETERS INDICATES NYSDEC SECTION 703.5 WATER QUALITY STANDARD WAS EXCEEDED IN WELL.

2.) GROUNDWATER DATA REPRESENTS SAMPLE RESULTS FROM THE JUNE 2012 SAMPLING EVENT.

3.) ACETONE WAS NOT INCLUDED IN THIS GROUNDWATER SUMMARY AS IT IS CONSIDERED A COMMON LABORATORY CONTAMINANT.

REFERENCES

1.) IMAGE LICENSED FROM GOOGLE EARTH PRO 2010.

2.) NEW GROUNDWATER SAMPLE LOCATIONS AND LOCATION SB514SE2 SURVEYED BY PASSERO ON JUNE 27, 2012.

100 0 100 200
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
BUILDING 514 AREA INVESTIGATION SUMMARY
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

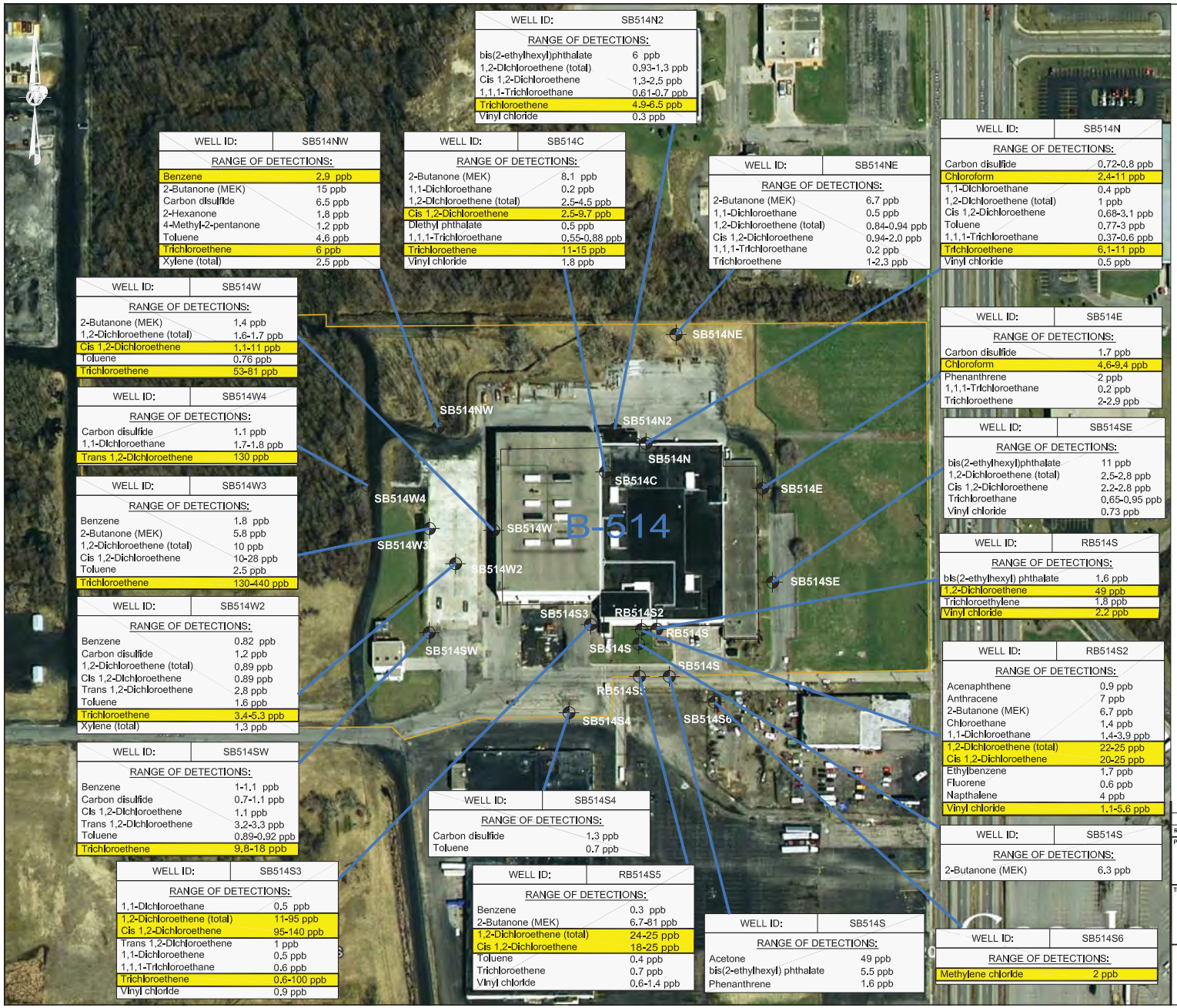
TITLE
SUMMARY OF GROUNDWATER INVESTIGATION DATA - TEMPORARY WELLS - JUNE 2012

Golder Associates
Mt. Laurel, New Jersey
NJ Authorization #24GA28029100

PROJECT No.	113-89275	FILE No.	11389275A012
DESIGN	PTM 08/20/12	SCALE AS SHOWN	REV. 0
CADD	AML 09/20/12		
CHECK			
REVIEW			

Figure A-2

Drawing file: 11389275A012.dwg Oct 25, 2012 - 2:22pm



WELL ID:	SB514N2
RANGE OF DETECTIONS:	
bis(2-ethylhexyl)phthalate	6 ppb
1,2-Dichloroethene (total)	0.93-1.3 ppb
Cis 1,2-Dichloroethene	1.3-2.5 ppb
1,1,1-Trichloroethane	0.61-0.7 ppb
Trichloroethene	4.9-6.5 ppb
Vinyl chloride	0.3 ppb

WELL ID:	SB514NW
RANGE OF DETECTIONS:	
Benzene	2.9 ppb
2-Butanone (MEK)	15 ppb
Carbon disulfide	6.5 ppb
2-Hexanone	1.8 ppb
4-Methyl-2-pentanone	1.2 ppb
Toluene	4.6 ppb
Trichloroethene	6 ppb
Xylene (total)	2.5 ppb

WELL ID:	SB514C
RANGE OF DETECTIONS:	
2-Butanone (MEK)	8.1 ppb
1,1-Dichloroethane	0.2 ppb
1,2-Dichloroethene (total)	2.5-4.5 ppb
Cis 1,2-Dichloroethene	2.5-9.7 ppb
Diethyl phthalate	0.5 ppb
1,1,1-Trichloroethane	0.55-0.88 ppb
Trichloroethene	11-15 ppb
Vinyl chloride	1.8 ppb

WELL ID:	SB514NE
RANGE OF DETECTIONS:	
2-Butanone (MEK)	6.7 ppb
1,1-Dichloroethane	0.5 ppb
1,2-Dichloroethene (total)	0.84-0.94 ppb
Cis 1,2-Dichloroethene	0.94-2.0 ppb
1,1,1-Trichloroethane	0.2 ppb
Trichloroethene	1-2.3 ppb

WELL ID:	SB514N
RANGE OF DETECTIONS:	
Carbon disulfide	0.72-0.8 ppb
Chloroform	2.4-11 ppb
1,1-Dichloroethane	0.4 ppb
1,2-Dichloroethene (total)	1 ppb
Cis 1,2-Dichloroethene	0.68-3.1 ppb
Toluene	0.77-3 ppb
1,1,1-Trichloroethane	0.37-0.6 ppb
Trichloroethene	6.1-11 ppb
Vinyl chloride	0.5 ppb

WELL ID:	SB514W
RANGE OF DETECTIONS:	
2-Butanone (MEK)	1.4 ppb
1,2-Dichloroethene (total)	1.6-1.7 ppb
Cis 1,2-Dichloroethene	1.1-11 ppb
Toluene	0.76 ppb
Trichloroethene	53-81 ppb

WELL ID:	SB514W4
RANGE OF DETECTIONS:	
Carbon disulfide	1.1 ppb
1,1-Dichloroethane	1.7-1.8 ppb
Trans 1,2-Dichloroethene	130 ppb

WELL ID:	SB514W3
RANGE OF DETECTIONS:	
Benzene	1.8 ppb
2-Butanone (MEK)	5.8 ppb
1,2-Dichloroethene (total)	10 ppb
Cis 1,2-Dichloroethene	10-28 ppb
Toluene	2.5 ppb
Trichloroethene	130-440 ppb

WELL ID:	SB514W2
RANGE OF DETECTIONS:	
Benzene	0.82 ppb
Carbon disulfide	1.2 ppb
1,2-Dichloroethene (total)	0.89 ppb
Cis 1,2-Dichloroethene	0.89 ppb
Trans 1,2-Dichloroethene	2.8 ppb
Toluene	1.6 ppb
Trichloroethene	3.4-5.3 ppb
Xylene (total)	1.3 ppb

WELL ID:	SB514SW
RANGE OF DETECTIONS:	
Benzene	1-1.1 ppb
Carbon disulfide	0.7-1.1 ppb
Cis 1,2-Dichloroethene	1.1 ppb
Trans 1,2-Dichloroethene	3.2-3.3 ppb
Toluene	0.89-0.92 ppb
Trichloroethene	9.8-18 ppb

WELL ID:	SB514S3
RANGE OF DETECTIONS:	
1,1-Dichloroethane	0.5 ppb
1,2-Dichloroethene (total)	11-95 ppb
Cis 1,2-Dichloroethene	95-140 ppb
Trans 1,2-Dichloroethene	1 ppb
1,1-Dichloroethene	0.5 ppb
1,1,1-Trichloroethane	0.6 ppb
Trichloroethene	0.6-100 ppb
Vinyl chloride	0.9 ppb

WELL ID:	SB514S4
RANGE OF DETECTIONS:	
Carbon disulfide	1.3 ppb
Toluene	0.7 ppb

WELL ID:	RB514S5
RANGE OF DETECTIONS:	
Benzene	0.3 ppb
2-Butanone (MEK)	6.7-81 ppb
1,2-Dichloroethene (total)	24-25 ppb
Cis 1,2-Dichloroethene	18-25 ppb
Toluene	0.4 ppb
Trichloroethene	0.7 ppb
Vinyl chloride	0.6-1.4 ppb

WELL ID:	SB514S
RANGE OF DETECTIONS:	
Acetone	49 ppb
bis(2-ethylhexyl) phthalate	5.5 ppb
Phenanthrene	1.6 ppb

WELL ID:	SB514E
RANGE OF DETECTIONS:	
Carbon disulfide	1.7 ppb
Chloroform	4.6-9.4 ppb
Phenanthrene	2 ppb
1,1,1-Trichloroethane	0.2 ppb
Trichloroethene	2-2.9 ppb

WELL ID:	SB514SE
RANGE OF DETECTIONS:	
bis(2-ethylhexyl)phthalate	11 ppb
1,2-Dichloroethene (total)	2.5-2.8 ppb
Cis 1,2-Dichloroethene	2.2-2.8 ppb
Trichloroethane	0.65-0.95 ppb
Vinyl chloride	0.73 ppb

WELL ID:	RB514S
RANGE OF DETECTIONS:	
bis(2-ethylhexyl) phthalate	1.6 ppb
1,2-Dichloroethene	49 ppb
Trichloroethylene	1.8 ppb
Vinyl chloride	2.2 ppb

WELL ID:	RB514S2
RANGE OF DETECTIONS:	
Acenaphthene	0.9 ppb
Anthracene	7 ppb
2-Butanone (MEK)	6.7 ppb
Chloroethane	1.4 ppb
1,1-Dichloroethane	1.4-3.9 ppb
1,2-Dichloroethene (total)	22-25 ppb
Cis 1,2-Dichloroethene	20-25 ppb
Ethylbenzene	1.7 ppb
Fluorene	0.6 ppb
Napthalene	4 ppb
Vinyl chloride	1.1-5.6 ppb

WELL ID:	SB514S
RANGE OF DETECTIONS:	
2-Butanone (MEK)	6.3 ppb

WELL ID:	SB514S6
RANGE OF DETECTIONS:	
Methylene chloride	2 ppb

LEGEND

MONITORING WELL

ASSESSMENT AREA OUTLINE

Chloroform 2.4-11 ppb — EXCEEDANCE OF TOGS 1.1.1 OR 6-NYCRR PART 703 VALUES

REFERENCES

1.) IMAGE LICENSED FROM GOOGLE EARTH PRO 2010.

NOTES

1.) SHADED PARAMETERS INDICATES NYSDEC SECTION 703.5 WATER QUALITY STANDARD WAS EXCEEDED WAS IN WELL.

2.) GROUNDWATER DATA REPRESENTS SAMPLE RESULTS FROM ONE OR MORE OF THE FOLLOWING SAMPLING EVENTS:

- FEBRUARY 2007
- OCTOBER 2007
- JANUARY 2008
- AUGUST 2009

3.) ACETONE WAS NOT INCLUDED IN THIS GROUNDWATER SUMMARY AS IT IS CONSIDERED A COMMON LABORATORY CONTAMINANT.

100 0 100 200
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

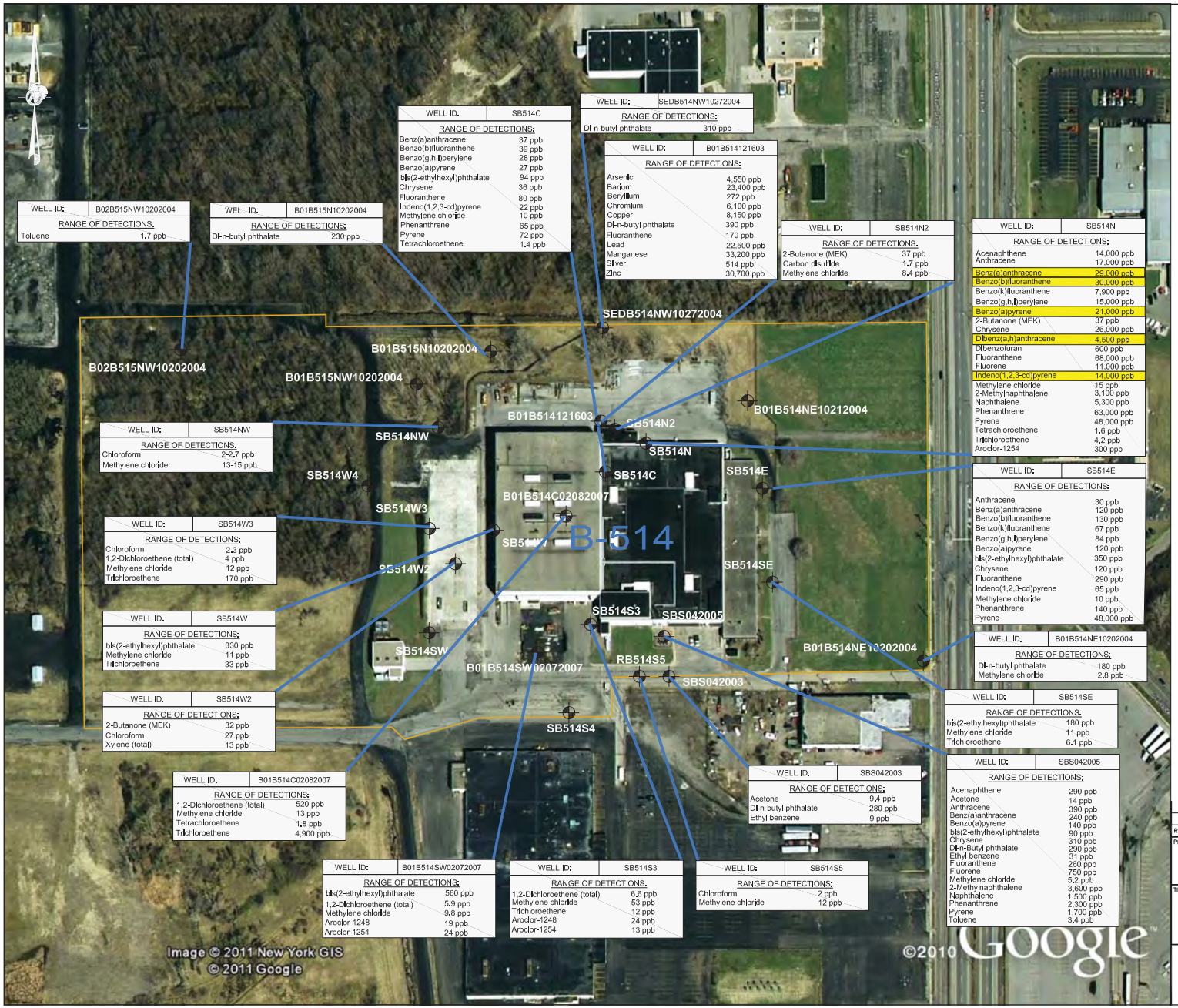
PROJECT
BUILDING 514 AREA INVESTIGATION SUMMARY
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

TITLE
SUMMARY OF GROUNDWATER INVESTIGATION DATA

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	113-89275	FILE No.	11389275A001	
DESIGN	AL	06/01/11	SCALE AS SHOWN	REV. 0
CADD	AL	11/04/11		
CHECK	PTM	01/23/12		
REVIEW	DCW	01/23/12		

Figure A-3



WELL ID:	B02B515NW10202004
RANGE OF DETECTIONS:	
Toluene	1.7 ppb

WELL ID:	B01B515N10202004
RANGE OF DETECTIONS:	
Di-n-butyl phthalate	230 ppb

WELL ID:	SB514C
RANGE OF DETECTIONS:	
Benz(a)anthracene	37 ppb
Benzo(b)fluoranthene	39 ppb
Benzo(g,h,i)perylene	28 ppb
Benzo(a)pyrene	27 ppb
bis(2-ethylhexyl)phthalate	94 ppb
Chrysene	36 ppb
Fluoranthene	80 ppb
Indeno(1,2,3-cd)pyrene	22 ppb
Methylene chloride	10 ppb
Phenanthrene	65 ppb
Pyrene	72 ppb
Tetrachloroethene	1.4 ppb

WELL ID:	SEDB514NW10272004
RANGE OF DETECTIONS:	
Di-n-butyl phthalate	310 ppb

WELL ID:	B01B514121603
RANGE OF DETECTIONS:	
Arsenic	4,550 ppb
Barium	23,400 ppb
Beryllium	272 ppb
Chromium	6,100 ppb
Copper	8,150 ppb
Di-n-butyl phthalate	390 ppb
Fluoranthene	170 ppb
Lead	22,500 ppb
Manganese	33,200 ppb
Silver	514 ppb
Zinc	30,700 ppb

WELL ID:	SB514N2
RANGE OF DETECTIONS:	
2-Butanone (MEK)	37 ppb
Carbon disulfide	1.7 ppb
Methylene chloride	8.4 ppb

WELL ID:	SB514N
RANGE OF DETECTIONS:	
Acenaphthene	14,000 ppb
Anthracene	17,000 ppb
Benz(a)anthracene	29,000 ppb
Benzo(b)fluoranthene	30,000 ppb
Benzo(k)fluoranthene	7,900 ppb
Benzo(g,h,i)perylene	15,000 ppb
Benzo(a)pyrene	21,000 ppb
2-Butanone (MEK)	37 ppb
Chrysene	26,000 ppb
Dibenz(a,h)anthracene	4,500 ppb
Dibenzofuran	600 ppb
Fluoranthene	68,000 ppb
Fluorene	11,000 ppb
Indeno(1,2,3-cd)pyrene	14,000 ppb
Methylene chloride	15 ppb
2-Methylnaphthalene	3,100 ppb
Naphthalene	5,300 ppb
Phenanthrene	63,000 ppb
Pyrene	48,000 ppb
Tetrachloroethene	1.6 ppb
Trichloroethene	4.2 ppb
Aroclor-1254	300 ppb

WELL ID:	SB514NW
RANGE OF DETECTIONS:	
Chloroform	2-2.7 ppb
Methylene chloride	13-15 ppb

WELL ID:	SB514W3
RANGE OF DETECTIONS:	
Chloroform	2.3 ppb
1,2-Dichloroethene (total)	4 ppb
Methylene chloride	12 ppb
Trichloroethene	170 ppb

WELL ID:	SB514W
RANGE OF DETECTIONS:	
bis(2-ethylhexyl)phthalate	330 ppb
Methylene chloride	11 ppb
Trichloroethene	33 ppb

WELL ID:	SB514W2
RANGE OF DETECTIONS:	
2-Butanone (MEK)	32 ppb
Chloroform	27 ppb
Xylene (total)	13 ppb

WELL ID:	B01B514C02082007
RANGE OF DETECTIONS:	
1,2-Dichloroethene (total)	520 ppb
Methylene chloride	13 ppb
Tetrachloroethene	1.8 ppb
Trichloroethene	4,900 ppb

WELL ID:	B01B514SW02072007
RANGE OF DETECTIONS:	
bis(2-ethylhexyl)phthalate	560 ppb
1,2-Dichloroethene (total)	5.9 ppb
Methylene chloride	9.8 ppb
Aroclor-1248	19 ppb
Aroclor-1254	24 ppb

WELL ID:	SB514S3
RANGE OF DETECTIONS:	
1,2-Dichloroethene (total)	6.6 ppb
Methylene chloride	53 ppb
Trichloroethene	12 ppb
Aroclor-1248	24 ppb
Aroclor-1254	13 ppb

WELL ID:	SB514S5
RANGE OF DETECTIONS:	
Chloroform	2 ppb
Methylene chloride	12 ppb

WELL ID:	SBS042003
RANGE OF DETECTIONS:	
Acetone	9.4 ppb
Di-n-butyl phthalate	280 ppb
Ethyl benzene	9 ppb

WELL ID:	SB514E
RANGE OF DETECTIONS:	
Anthracene	30 ppb
Benz(a)anthracene	120 ppb
Benzo(b)fluoranthene	130 ppb
Benzo(k)fluoranthene	67 ppb
Benzo(g,h,i)perylene	84 ppb
Benzo(a)pyrene	120 ppb
bis(2-ethylhexyl)phthalate	350 ppb
Chrysene	120 ppb
Fluoranthene	290 ppb
Indeno(1,2,3-cd)pyrene	65 ppb
Methylene chloride	10 ppb
Phenanthrene	140 ppb
Pyrene	48,000 ppb

WELL ID:	B01B514NE10202004
RANGE OF DETECTIONS:	
Di-n-butyl phthalate	180 ppb
Methylene chloride	2.8 ppb

WELL ID:	SB514SE
RANGE OF DETECTIONS:	
bis(2-ethylhexyl)phthalate	180 ppb
Methylene chloride	11 ppb
Trichloroethene	6.1 ppb

WELL ID:	SBS042005
RANGE OF DETECTIONS:	
Acenaphthene	290 ppb
Acetone	14 ppb
Anthracene	390 ppb
Benz(a)anthracene	240 ppb
Benzo(a)pyrene	140 ppb
bis(2-ethylhexyl)phthalate	90 ppb
Chrysene	310 ppb
Di-n-Butyl phthalate	290 ppb
Ethyl benzene	31 ppb
Fluoranthene	260 ppb
Fluorene	750 ppb
Methylene chloride	5.2 ppb
2-Methylnaphthalene	3,600 ppb
Naphthalene	1,500 ppb
Phenanthrene	2,300 ppb
Pyrene	1,700 ppb
Toluene	3.4 ppb

LEGEND

SOIL BORING

ASSESSMENT AREA OUTLINE

Benzo(a)pyrene 21,000 ppb — EXCEEDANCE OF 6-NYCRR RESTRICTED COMMERCIAL OR INDUSTRAIL PART 375 VALUES

REFERENCES

1.) IMAGE LICENSED FROM GOOGLE EARTH PRO 2010.

NOTES

1.) SHADED PARAMETERS INDICATES NYSDEC 6 NYCRR PART 375 SOIL CLEANUP OBJECTIVES (RESIDENTIAL THROUGH INDUSTRIAL) WAS EXCEEDED AT BORING LOCATION.

2.) SOIL DATA REPRESENTS SAMPLE RESULTS FROM ONE OR MORE OF THE FOLLOWING SAMPLING EVENTS: 10/20/2004, 10/21/2004, 10/27/2004, 2/6/2007, 2/7/2007, 2/8/2007, 2/9/2007, 10/1/2007, 10/2/2007 1/2/2008, 1/3/2008

3.) ACETONE WAS NOT INCLUDED IN THIS SOIL SUMMARY AS IT IS CONSIDERED A COMMON LABORATORY CONTAMINANT.

100 0 100 200
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

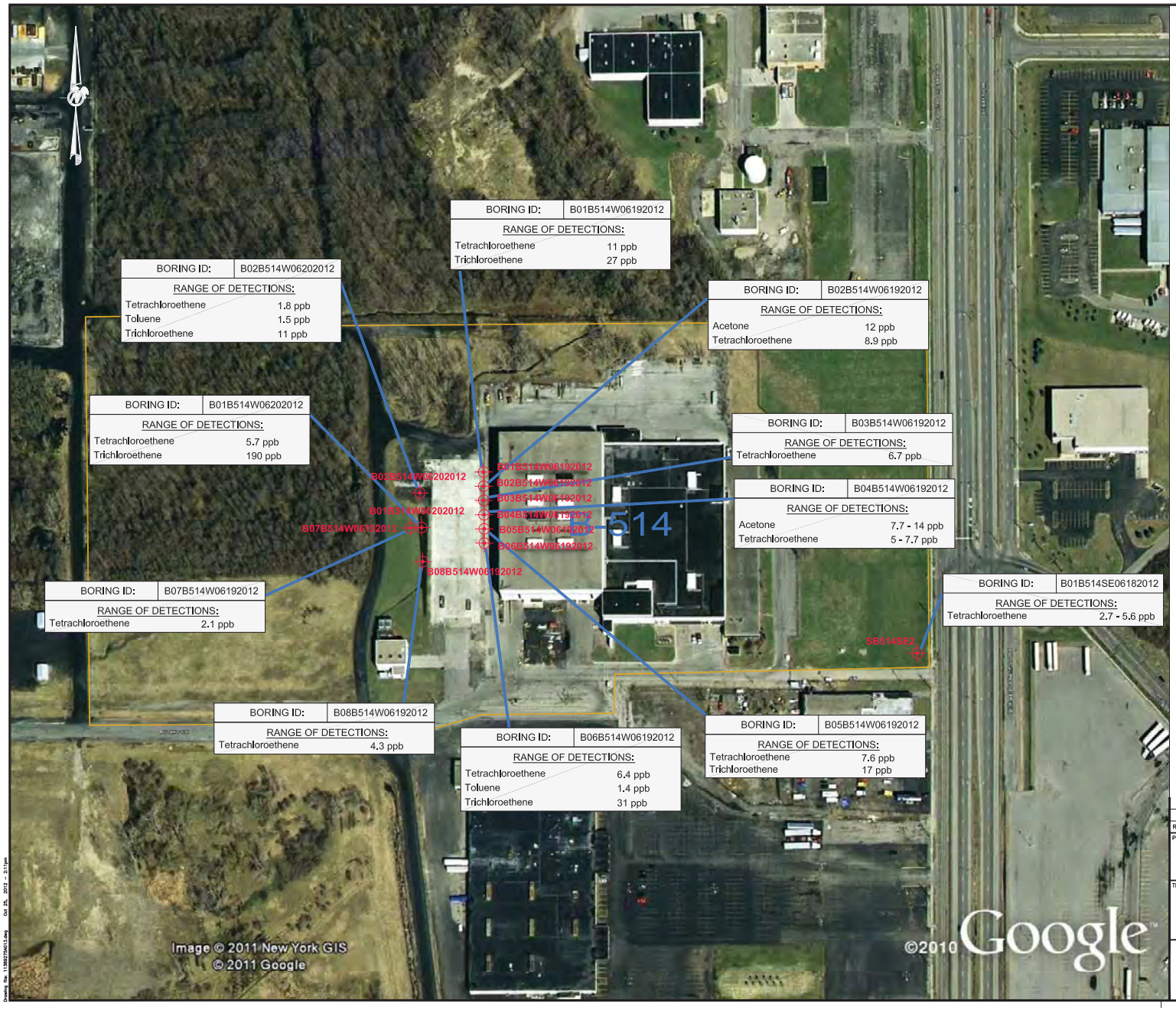
PROJECT
BUILDING 514 AREA INVESTIGATION SUMMARY
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

TITLE
SUMMARY OF SOIL INVESTIGATION DATA

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.		113-89275	FILE No.	11389275A002
DESIGN	AL	06/01/11	SCALE AS SHOWN	REV. 0
CADD	AL	11/04/11		
CHECK	PTM	01/23/12		
REVIEW	DCW	01/23/12		

Figure A-4



LEGEND

NEW SOIL SAMPLE LOCATIONS (SEE REFERENCE 2)

ASSESSMENT AREA OUTLINE

REFERENCES

1.) IMAGE LICENSED FROM GOOGLE EARTH PRO 2010.

2.) SOIL SAMPLE LOCATIONS AND SOIL BORING SB514SE2 SURVEYED BY PASSERO ON JUNE 27, 2012.

100 0 100 200
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
BUILDING 514 AREA INVESTIGATION SUMMARY
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

TITLE
SUMMARY OF SOIL INVESTIGATION DATA - JUNE 2012

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	113-89275		FILE No.	11389275A013
DESIGN	PTM	08/20/12	SCALE AS SHOWN	REV. 0
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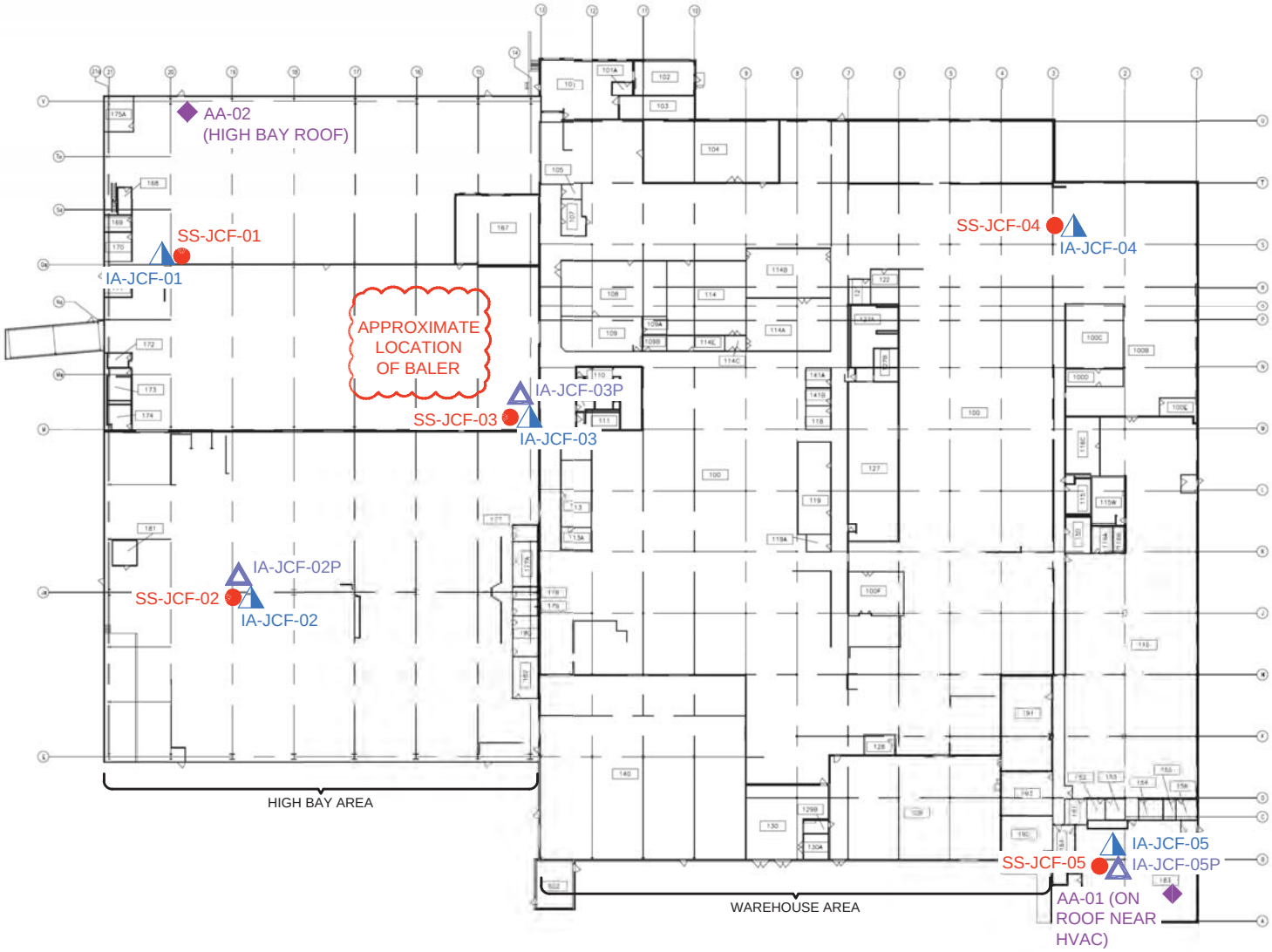
CHECK			Figure A-5	
REVIEW				

Drawing file: 11389275A013.dwg Oct 25, 2012 - 2:11pm



LEGEND

- SUB-SLAB SAMPLE LOCATION
- INDOOR AIR SAMPLE LOCATION
- SOIL VAPOR SAMPLE LOCATION
- AMBIENT AIR SAMPLE LOCATION
- PASSIVE INDOOR AIR SAMPLE LOCATION

EASTMAN KODAK
Rochester, New York

SAMPLING LOCATIONS
JC FIBERS/FORMER KODAK
BUILDING B514

Figure A-6

JUNE 2011

R:\Eastman_Kodak\EK0728\Drawings\Building B514.dwg, 6/10/2011 1:33 PM

Exhibit B

SUMMARY OF THE CLEANUP OBJECTIVES

The goal for the corrective measure program is to achieve unrestricted use of the site to the extent feasible. At a minimum, the corrective measure(s) shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the facility through the proper application of scientific and engineering principles.

The established cleanup objectives for this facility are:

Compound	Soil Cleanup Objective[1] (ppm or mg/kg)	Groundwater Cleanup Objective[2] (ppb or ug/l)
VOCs		
Trichloroethene	0.47 {U}; 200 {C}; 400 {I}	5
1,2-Dichloroethene	NA	5
Vinyl Chloride	NA	2

NA – Not applicable; there was no exceedance of unrestricted use SCG.
1. Recommended Soil Cleanup Objectives: {U} = Unrestricted Use; {C} = Restricted Commercial; {I} = Restricted Industrial
2. NYS Groundwater Standards (6 NYCRR Part 700), Division of Water TOGS 1.1.1.

Exhibit C

Description of Remedial Alternatives

The following alternatives were considered based on the cleanup objectives to address the contaminated media identified at the facility:

Alternative 1 – Groundwater Monitoring and Assessment with Institutional Controls

Monitor and document contaminant concentration trends through annual focused groundwater monitoring of the B-514 groundwater monitoring network wells representative of the impacted groundwater. Perform trend analysis to assess long term compliance with groundwater standards and determine if significant plume is migration is occurring. Employ institutional controls to limit potential exposures that could arise during future use of the site. These include excavation control provisions related to soil and groundwater management, a groundwater use restriction and controls for soil vapor intrusion.

Capital Cost: *$0*
Annual Costs: *$10,200*
Total Present Worth Costs: *$167,000*

Alternative 2 –In-situ Nano-scale Zero Valent Iron (NZVI) Groundwater Treatment

Implement NZVI injection with the intent of achieving compliance with groundwater quality standards across the entire plume within a shortened time frame. Employ institutional controls to limit potential exposures that could arise during future use of the site. These include excavation control provisions related to soil and groundwater management, a groundwater use restriction and controls for soil vapor intrusion.

Capital Cost: *$282,000*
Annual Costs: *$10,200*
Total Present Worth Costs: *$439,000*

Alternative 3 – Groundwater Extraction and On-Site Treatment

Design of a groundwater collection system installed in a north-south orientation located west of the Building B-514 and existing monitoring wells SB514E and SB514SE; the intent to establish a hydraulic barrier for the purposes of capture and migration control of contaminants. The recovered groundwater is treated at a centrally located on-site aqueous treatment system designed for the removal of chlorinated VOCs. The treatment system consists of a tray type countercurrent air stripper. The need for air emission control on the treatment unit (thermal oxidizer or carbon) will be determined in accord with DEC's DAR-1 (Guidelines for the Control of Air Contaminants). Employ institutional controls to limit potential exposures that could arise

during future use of the site. These include excavation control provisions related to soil and groundwater management, a groundwater use restriction and controls for soil vapor intrusion.

Capital Cost: *$372,000*
Annual Costs: *$67,000*
Total Present Worth Costs: *$1,400,000*

Exhibit D

Corrective Measure Alternative Costs

Corrective Measure Alternative	Capital Cost (2013$)	Annual Costs (2013$)	Total Present Worth[1] (2013$)
Alternative No. 1	0	10,200	167,000
Alternative No. 2	282,000	10,200	439,000
Alternative No. 3	372,000	67,000	1,400,000

A more detailed breakdown of costs associated with each alternative can be found in the Presumptive Remedy Report (Golder, June 2013).

[1] Present Worth was calculated by adding the capital cost to the present worth of the annual costs. For comparison purposes, operation of the remedy for 30 years was assumed. A 5% interest rate was assumed for the calculated costs shown above.

Exhibit E

BASIS FOR FINAL CORRECTIVE MEASURES SELECTION

The Department has identified Alternative No. 1 – Groundwater Monitoring and Assessment with Institutional Controls as the preferred remedy for this site. The Department's basis for selection of Alternative 1 is summarized below.

Alternative 1 – Groundwater Monitoring and Assessment with Institutional Controls

This alternative involves the continued annual monitoring and assessment of B-514 groundwater using a network of existing monitoring wells. Those wells representative of locations with the highest residual groundwater impacts (as of the June 2012 monitoring event) are included in the sampling program. A recently installed well located in the southeastern part of the site is included to monitor for potential future off-site impacts. An annual sampling frequency will be used initially. This alternative involves completing a trend analysis periodically to delineate the concentration trends (TCE and its breakdown byproducts) for each contaminant and prepare an assessment report on the overall groundwater quality at the B-514 site and the predicted timeframe for achievement of compliance with groundwater SCGs based on the calculated rate of natural degradation. Alternatively, if concentrations of TCE or its degradation byproducts show statistically significant increasing concentration trends, additional actions would be taken to assess and address the situation.

The remedy employs institutional controls to limit potential exposures that could arise during future use of the site. These include excavation control provisions related to soil and groundwater management, groundwater use restriction and provisions related to soil vapor intrusion issues.

This alternative is readily implementable from a technical standpoint and utilizes existing sampling, analytical, data assessment, reporting and institutional control methodologies.

Remedy Selection Criteria

Threshold Criteria

Protection of Human Health and the Environment

Alternatives 1, and 3 are protective of human health, because they each provide institutional controls to minimize future exposures related to soil, groundwater and soil vapor contamination. Groundwater use within the impacted area is also not a contributing factor as the impacted area falls within the City of Rochester's municipal water service area and future use of groundwater is not permitted.

Alternative 1 is protective of the environment as the pathway for direct contact and potential metabolic uptake from ground water exposure to ecologic receptors is currently incomplete. In addition, the potential for adverse future exposures will continue to diminish as VOC

concentrations continue to decline due to contaminant degradation and related natural attenuation processes.

Achieve Cleanup Objectives for the Contaminated Media. – Based on the results obtained from the Supplemental RFI, the 46 to 100 % reductions in VOC concentrations documented between 2007 and 2012 demonstrate that Alternative 1 is viable and already resulting in achievement of the groundwater SCGs at some monitoring locations.

Remediate the Sources of Releases. – Based on the site investigation results, no discernible source areas were identified. Therefore the remedy does not include any actions specific to source areas.

Comply with Standards for Management of Wastes. – Alternative 1 does not call for soil excavation or groundwater extraction, so there will be no significant waste generation associated with implementation of the remedy. Any wastes generated through groundwater monitoring activities are minimal, and can readily be conducted in a protective manner.

Balancing Criteria

Long-term Effectiveness and Permanence. All three alternatives are expected to provide similar levels of long-term effectiveness after implementation. Residual groundwater concentrations are expected to continue to exceed the SCGs for some time after remedy implementation for all of the alternatives because of difficulties presented by fractured bedrock conditions and the rate-limiting effects posed by bedrock matrix diffusion. Due to these site conditions, the time to achieve the SCGs for groundwater is expected to be comparable for all alternatives. The alternatives rely on the same type of institutional controls to limit risk associated with residual contamination, so they are equivalent in this regard. Alternative 3 involves active operation of a groundwater extraction and treatment system. The reliability of such systems is dependent on proper monitoring and maintenance, so Alternative 3 has a slight negative in this regard relative to Alternatives 1 and 2. Alternative 3 is also more energy intensive than Alternative 1 since it includes extended operation of an active pumping well and a blower for the treatment of the extracted water. Alternative 3 is viewed negatively based on the green remediation metric of reducing direct and indirect greenhouse gas and other emissions.

Reduction of Toxicity, Mobility, Volume. Under Alternative 1, current rates of degradation consistent with the findings of the Supplemental RFI are expected to continue. Therefore, the toxicity and volume of chlorinated VOCs are expected to decrease and achievement of ground water SCGs standards is anticipated in a timeframe that will not endanger on or off-site receptors and is consistent with long term corrective action goals. All three alternatives are expected to provide similar levels of performance relative to this criterion.

Short-term Impacts and Effectiveness. Alternative 1 does not involve any construction/implementation activities. Alternatives 2 and 3 do involve such activities, with Alternative 3 requiring more subsurface infrastructure installation than Alternative 2. While potential short-term adverse impacts upon the community, the workers, and the environment associated with construction/implementation of Alternatives 2 and 3 can be mitigated, these are

negatives relative to Alternative 1. Alternatives 2 and 3 also involve greater direct and indirect greenhouse gas and other emissions relative to Alternative 1, so they are viewed negatively on these green remediation metrics. Alternative 1 is preferred based on this balancing criterion.

Implementability. While implementation of all three alternatives is feasible, Alternative 1 is most readily implementable, since it involves continuation of current monitoring and reporting programs. Alternative 2 requires an underground injection control permit from EPA. Alternative 2 also requires numerous subsurface injection points. Site access required to implement Alternative 2 is complicated by existing site development and subsurface infrastructure/utilities. Alternative 3 involves extraction well installation and related subsurface piping installation which are also complicated by existing site development/infrastructure. Alternative 3 also requires management of extracted groundwater (treat by air stripping). Alternative 3 involves an air discharge evaluation (possible permit requirement), and a sewer use permit for discharge of the treated water. For these reasons Alternative 1 is preferred based on this balancing criterion.

Cost-Effectiveness. Alternative 1 has lower estimated costs than Alternatives 2 and 3, so Alternative 1 is preferred based on this balancing criterion.

Summary

All three alternatives satisfy the threshold section criteria, and have the potential to meet the remedial objectives for this site. However, when the balancing criteria are taken into consideration, Alternative 1 is preferred. Alternative 1 provides an effective approach for reducing groundwater VOC concentrations, protecting the environment and minimizing exposure potential, in a readily implementable, cost effective manner.

APPENDIX A

RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY

Eastman Business Park – South (EBP-S)
Former Kodak Building 514 Investigation Area
DEC Site No. 828177
Town of Greece
Rochester, Monroe County
NYSDEC Order on Consent Index #CO 8-2011-10022

The Proposed Statement of Basis for the referenced site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on January 23, 2014. The proposed Statement of Basis outlined the remedial measures proposed for the referenced site.

The release of the proposed Statement of Basis was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy. The announcement was also mailed to adjacent property owners.

The public comment period for the proposed remedy was held from January 23, 2014 through February 28, 2014. The Department did not receive any comments on the proposed action during the comment period.

APPENDIX B

ADMINISTRATIVE RECORD

ADMINISTRATIVE RECORD

Eastman Business Park – South (EBP-S)
Former Kodak Building 514 Investigation Area
DEC Site No. 828177
Town of Greece
Rochester, Monroe County
NYSDEC Order on Consent Index #CO 8-2011-10022

March 2014

Documents

- June 2000, Eastman Kodak Company, KPS Ungrouped SWMUs Investigation Work Plan.
- September 2000, New York State Department of Environmental Conservation, Letter to Eastman Kodak Company, KPS Ungrouped SWMUs Investigation Work Plan, approval of work plan with modifications.
- September 2001, Eastman Kodak Company, KPS Ungrouped SWMUs S-041 and S-042 Supplemental Subsurface Investigation Work Plan.
- July 2002. Report on Ungrouped SWMUs S-031/S-041 and S-042 Investigation, Kodak Park Corrective Action Program, Eastman Kodak Company, Rochester, New York. Golder Associates.
- April 2004. Report on 2003 Ungrouped SWMUs Investigation, Kodak Park Corrective Action Program, Eastman Kodak Company, Rochester, New York. Golder Associates.
- August 11, 2004. Report on Environmental Site Assessment, Eastman Kodak Company, Kodak Park Facility, KPS Area, Rochester, New York. Golder Associates.
- July 16, 2005. Appendix E, Report on Building 514/515/516 Area, Site Characterization Study, Eastman Kodak Company, Kodak Park Section, Rochester, New York. Golder Associates.
- October 2006. Phase I Environmental Site Assessment of Buildings 514 and 516, Eastman Kodak Company. Leader Professional Services, Inc.
- July 2007. Phase II Environmental Site Assessment, Building 514, Kodak Park Section KPS, Rochester, New York. Leader Professional Services, Inc.
- February 2008. Addendum Phase II Environmental Assessment, Building 514, Kodak Park Section KPS, Rochester, New York. Leader Professional Services, Inc.
- October 2009. Offsite Monitoring Well Installation and Groundwater Sampling, Former Eastman Business Park Building 514, Rochester, New York. Leader Professional Services, Inc.

- April 2011. Structure Sampling Work Plan, J.C. Fibers Facility, Former Kodak B-514, 1801 Mt. Read Boulevard, Eastman Business Park, Rochester, New York. EnviroGroup Limited.
- June 2011. Structure Sampling Report, J.C. Fibers Facility, Former Kodak B-514, 1801 Mt. Read Boulevard, Eastman Business Park, Rochester, New York. EnviroGroup Limited.
- September 2011. Technical Memorandum – Results of Preferential Pathway Evaluation, J.C. Fibers/Former Kodak B514, Rochester, New York. EnviroGroup Limited.
- November 2011. Soil Vapor Intrusion Change Use Management Program – Former Kodak Building 514, Eastman Business Park, Rochester, New York. Eastman Kodak Company.
- December 2011. Former Kodak Building 514 Soil Vapor Intrusion Change Use Management Plan – Approval Letter. NYSDEC.
- May 2012. Building 514 RCRA Facility Investigation Report and Supplemental Work Plan, Eastman Business Park, Rochester, New York. Golder Associates, Inc.
- October 2012. Building 514 RCRA Facility Investigation Report, Results of June 2012 Supplemental Investigation, Eastman Business Park Building 514, Rochester, New York. Golder Associates, Inc.
- February 2013. New York State Department of Environmental Conservation Order-On-Consent Index #CO 8-2011-10022 (RCRA Property Transfer Order).
- June 2013. Building 514 Alternatives Analysis and Presumptive Remedy Evaluation, Eastman Business Park, Rochester, New York. Golder Associates, Inc.
- January 2014. New York State Department of Environmental Conservation Proposed Statement of Basis for Former Kodak Building 514 Investigation Area.