

New York State Department of Environmental Conservation
Division of Environmental Remediation
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March 18, 2014

Mr. Bryan Gallagher
Eastman Business Park Corrective Action Program Manager
Eastman Kodak Company
1999 Lake Avenue
Building 83, 11th Floor
Rochester, New York 14650-2203

RE: Eastman Business Park Corrective Action Program
Former Kodak Building 514 Investigation Area
DEC Consent Order Index # CO 8-2011-10022
Eastman Business Park South (EBP-S)
Rochester, New York

Dear Mr. Gallagher:

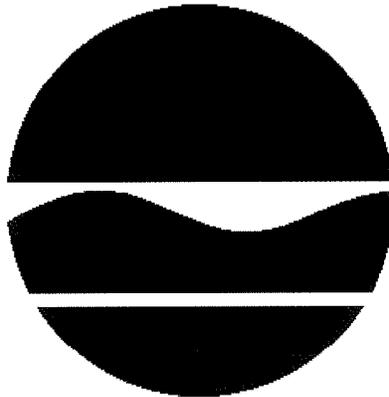
The New York State Department of Environmental Conservation (DEC) finalized remedy selection for the referenced area on March 7, 2014. A copy of the final Statement of Basis is enclosed. Kodak now needs to implement the remedy. As you are aware, the remedy calls for placement of an environmental easement on the property to control potential exposures to residual contamination. The easement typically refers to a Site Management Plan (SMP) that specifies in detail the institutional and engineering controls and related monitoring and reporting requirements for long-term management of this site.

DEC requests that within 45 days, Kodak submit a SMP for this site for review and approval. Concurrently, Kodak needs to be working with the site owner regarding developing and filing the environmental easement. DEC guidance about the easement process can be found at <http://www.dec.ny.gov/chemical/65118.html>. DEC expects that the content of the SMP and easement will be similar to the documents that Kodak recently prepared for the EBP-S Shed S-26 remedy. DEC requests that the easement be filed within 90 days.

Final

**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

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

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.

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**.

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.

- 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.

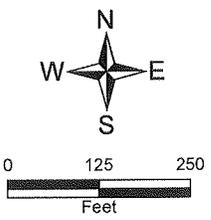
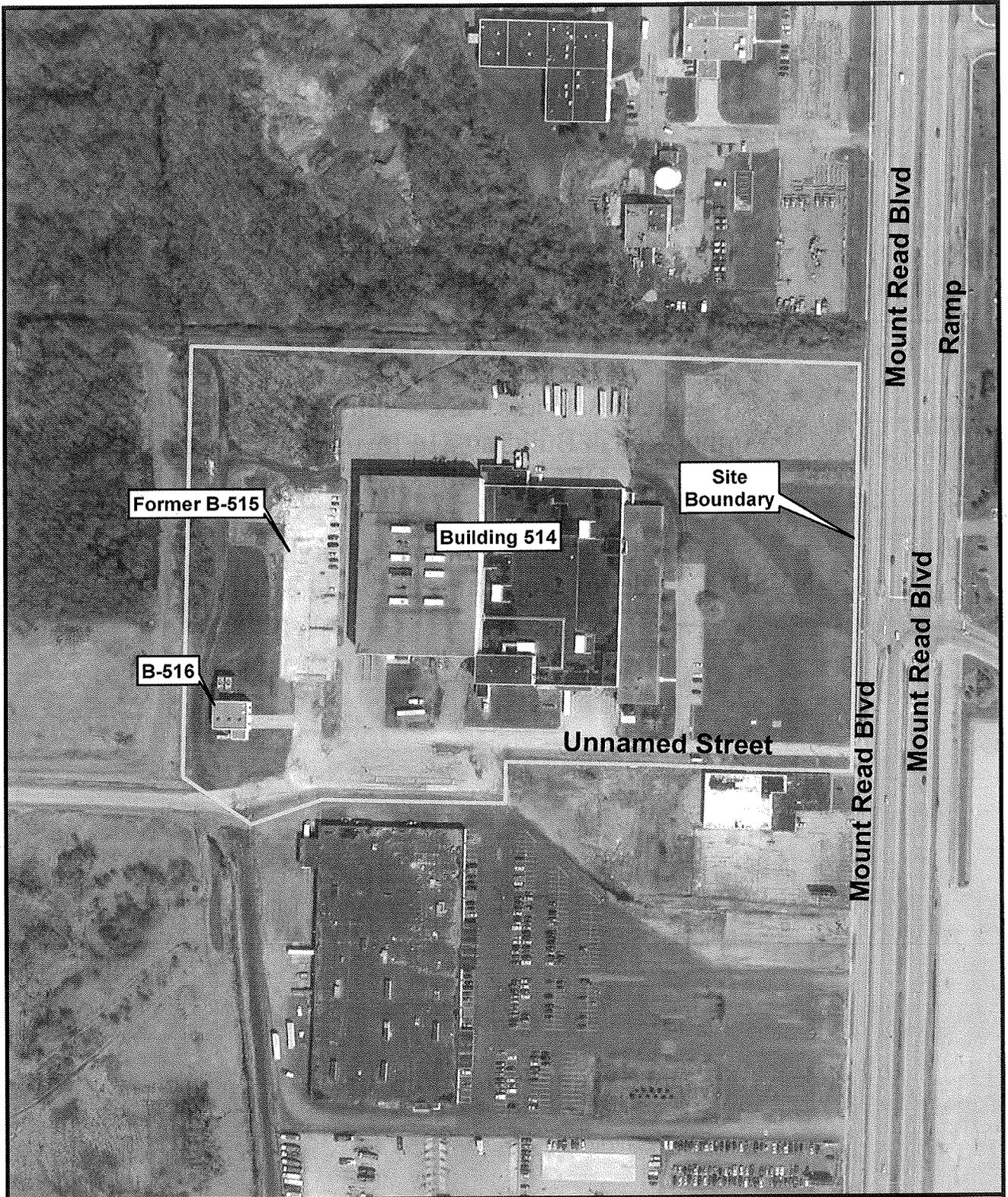


Figure 2
Site Map
Eastman Business Park- South (EBP-S)
Former Kodak Building 514 Area
City of Rochester, Town of Greece, Monroe County
DEC Site No. 828177



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.

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 exceedances 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.

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 $2.5 \text{ ug}/\text{m}^3$ 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:	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:	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

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

LEGEND	
	MONITORING WELL
	NEW GROUNDWATER SAMPLE LOCATIONS (SEE REFERENCE 2)
	ASSESSMENT AREA OUTLINE
	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.



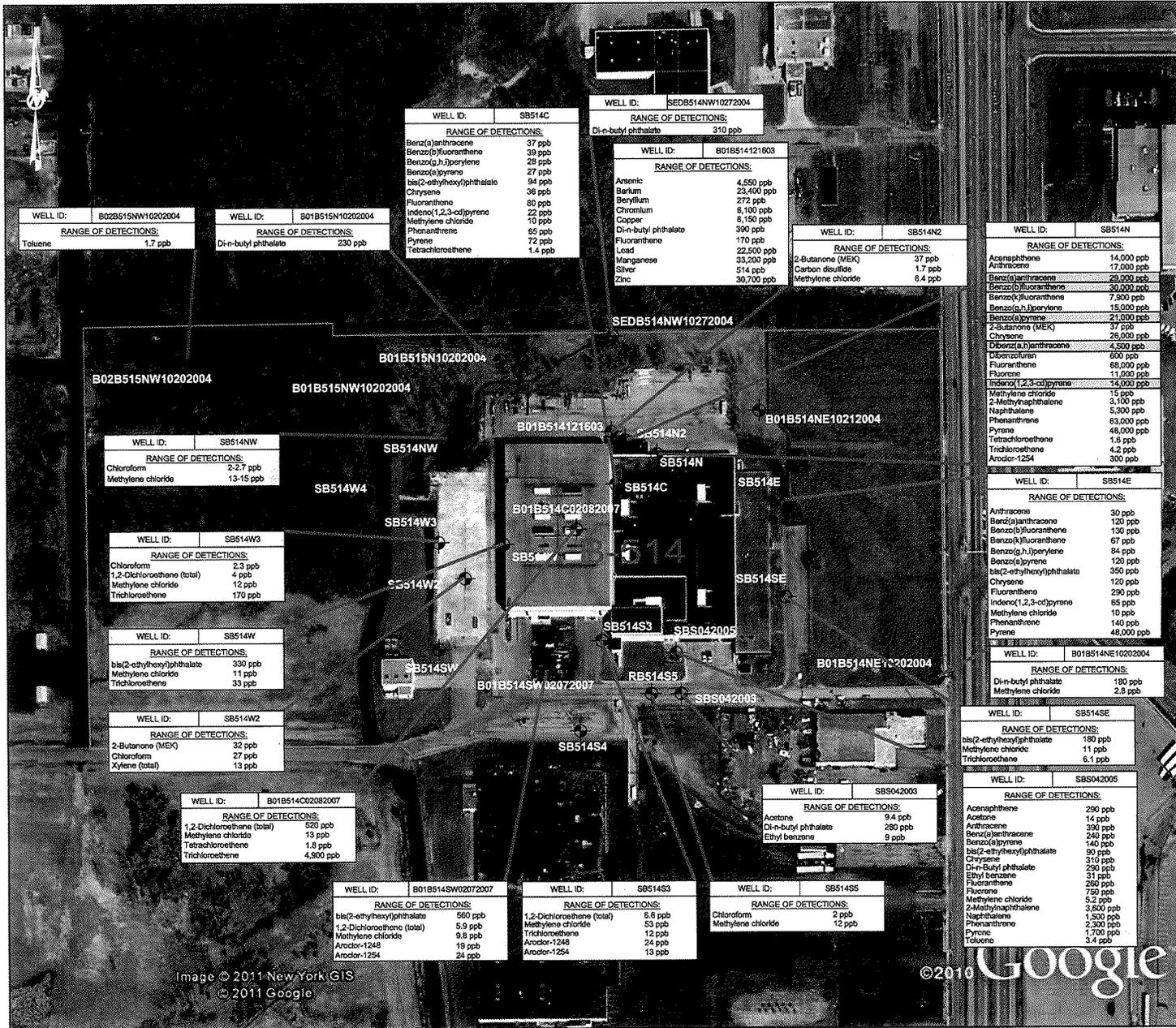
REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW
PROJECT: BUILDING 514 AREA INVESTIGATION SUMMARY EASTMAN KODAK COMPANY ROCHESTER, NEW YORK						
TITLE: SUMMARY OF GROUNDWATER INVESTIGATION DATA - TEMPORARY WELLS - JUNE 2012						
PROJECT No. 113-89275			FILE No. 11389275A012			
DESIGN	PTM	08/20/12	SCALE	AS SHOWN	REV.	0
CADD	AML	09/20/12				
CHECK						
REVIEW						



Figure A-2

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Image © 2011 New York GIS
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LEGEND

- SOIL BORING
- ASSESSMENT AREA OUTLINE
- EXCEEDANCE OF 6-NYCRR RESTRICTED COMMERCIAL OR INDUSTRIAL 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.

WELL ID:	SB514N
RANGE OF DETECTIONS:	
Acenaphthene	14,000 ppb
Anthracene	17,000 ppb
Benzo(a)anthracene	29,000 ppb
Benzo(b)fluoranthene	30,000 ppb
Benzo(k)fluoranthene	7,500 ppb
Benzo(g,h,i)perylene	15,000 ppb
Benzo(a)pyrene	21,000 ppb
2-Butanone (MEK)	37 ppb
Chrysene	25,000 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	1.8 ppb
Trichloroethene	4.2 ppb
Aroclor-1254	300 ppb

WELL ID:	SB514E
RANGE OF DETECTIONS:	
Anthracene	30 ppb
Benzo(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:	SB5042005
RANGE OF DETECTIONS:	
Acenaphthene	290 ppb
Acetone	14 ppb
Anthracene	350 ppb
Benzo(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



REV	DATE	DES	REVISION DESCRIPTION	QACD	CHK	RWF
PROJECT	BUILDING 514 AREA INVESTIGATION SUMMARY EASTMAN KODAK COMPANY ROCHESTER, NEW YORK					

SUMMARY OF SOIL INVESTIGATION DATA

DESIGN	AL	08/01/11	SCALE	AS SHOWN	REV.	0
QACD	AL	11/04/11				
CHECK	FTM	01/23/12				
REVIEW	BCW	01/23/12				

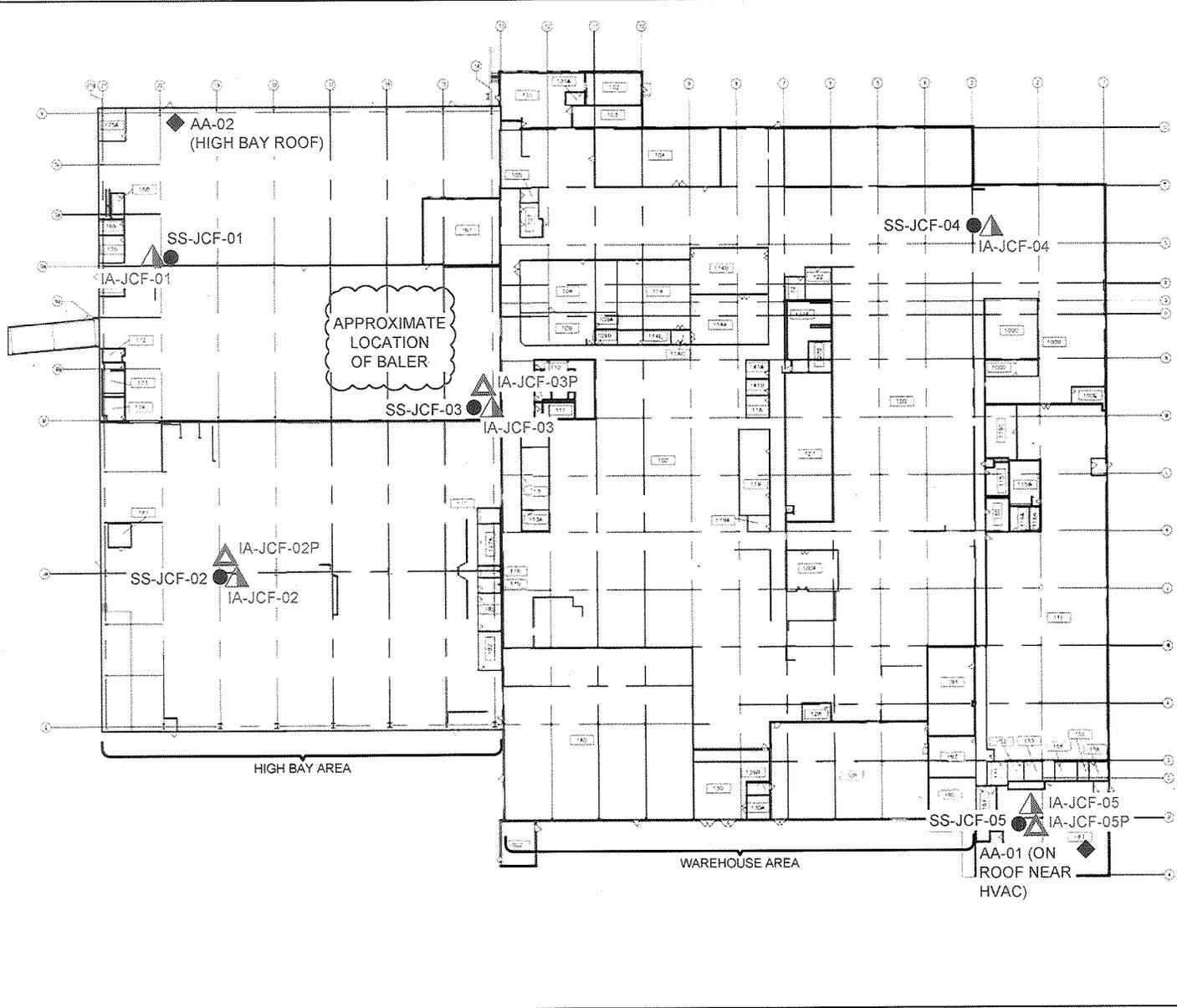
Figure A-4

Image © 2011 New York GIS
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PROJECT No.	113-89275	FILE No.	11389275A002
DESIGN	AL	08/01/11	SCALE AS SHOWN REV. 0
QACD	AL	11/04/11	
CHECK	FTM	01/23/12	
REVIEW	BCW	01/23/12	



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

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 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

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.

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

APPENDIX A

RESPONSIVENESS SUMMARY

APPENDIX B

ADMINISTRATIVE RECORD

- 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.