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Transmitted Via Email and FedEx

June 13, 2011

Mr. Matt Mortefolio, P.E.
NYSDEC Project Coordinator
Remedial Bureau E
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7017

Mr. Michael Infurna
USEPA Project Coordinator
Environmental Planning and Protection Division
United States Environmental Protection Agency, Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

Re: North Commercial/Industrial Area Wooded Parcel Site Management Plan
Relative to 2007 Early Action Remedial Work – Revision No. 1
RCRA Section 3008(h) Administrative Order on Consent (AOC)
Docket No. II-RCRA-90-3008(h)-209
FMC Corporation, Middleport, NY Facility
EPA I.D. No. NYD002126845

Dear Messrs. Mortefolio and Infurna:

FMC Corporation (FMC) has prepared the *North Commercial/Industrial Area Wooded Parcel Site Management Plan Relative to 2007 Early Action Remedial Work – Revision No. 1* in accordance with the terms and conditions of the above-referenced AOC. As discussed below, the enclosed materials are the revised portions of the *North Commercial/Industrial Area Wooded Parcel Site Management Plan Relative to 2007 Early Action Remedial Work* which was approved by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) (jointly, the Agencies), in consultation with the New York State Department of Health (NYSDOH), by letter to FMC dated May 19, 2009.

By letter to the Agencies dated August 23, 2010, FMC submitted a request to eliminate the quarterly sampling of stormwater at catch basin CB-S6 specified in the plan. By letter dated February 23, 2011, the Agencies approved a reduction in the frequency of this sampling from quarterly to annually, with implementation of this revision beginning in the first calendar quarter of 2011. In addition, the Agencies requested that FMC submit revised pages of the Site Management Plan for review. FMC submitted an e-draft of revised pages (in redline/strikeout format) of the plan to the Agencies by email dated April 4, 2011, and the Agencies approved the proposed revisions by email dated June 3, 2011. As noted in FMC's April 4, 2011 email and as requested in the June 3, 2011 approval, enclosed is a hard copy of the revised portions of the plan.

The following items are enclosed, and the following action is needed to revise your printed copy of the plan in its three-ring binder previously provided:

Item Enclosed:	**Action Needed:**
Outside cover and spine (revised)	Replace in binder outside jacket
Inside cover and title page (revised)	Replace inside binder
Table of Contents and Text of Plan (revised)	Replace inside binder
Table 1 and Figure 2 (revised)	Replace inside binder
Inspection Form (revised)	Replace in Appendix C inside binder

If you have questions or need additional information, please contact me.

Sincerely,

Brian M. McGinnis

Brian M. McGinnis
Remediation Project Manager
(215) 299-6047

Enclosure

cc: With enclosure:
M. Hinton, NYSDEC, Buffalo
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S. Radon, NYSDEC, Buffalo
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S. Coe, property owner
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W. Arnold, Middleport Community Input Group
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D. Watts, Technical Consultant to MCIG/MRAG
Senator George Maziarz, Wheatfield
Assemblywoman Jane Corwin, Clarence

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Middleport, New York

North Commercial/Industrial Area Wooded Parcel

Site Management Plan Relative to 2007 Early Action Remedial Work

April 2009

Revision No. 1 – June 2011

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6.13.11

Erin C. Rankin, P.E.
New York State P.E. No. 071628

Date

North Commercial/Industrial Area Wooded Parcel

Site Management Plan Relative to 2007 Early Action Remedial Work

Prepared for:
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Our Ref.:
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Date:
April 2009
Revision No. 1 – June 2011

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Tables

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Acronyms

Agencies	NYSDEC and USEPA
AOC	Administrative Order on Consent
BBL	Blasland, Bouck & Lee, Inc.
bgs	below ground surface
CAMP	Community Air Monitoring Plan
ELAP	Environmental Laboratory Accreditation Program
ESI	Eastern Surface Impoundment
FMC	FMC Corporation
GCL	geosynthetic clay liner
HASP	health and safety plan
HDPE	high-density polyethylene
ICM	Interim Corrective Measure
MCIG	Middleport Community Input Group
NYCRR	Compilation of the Rules and Regulations of the State of New York
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSEG	New York State Electric & Gas
RCRA	Resource Conservation and Recovery Act
SMP	Site Management Plan
SMEWW	Standard Methods for Examination of Water and Wastewater
USEPA	United States Environmental Protection Agency

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North Commercial/Industrial Area Wooded Parcel Site Management Plan Relative to 2007 Early Action Remedial Work

FMC Corporation
Middleport, New York

1. Introduction

1.1 Purpose

In 2007 and 2008, FMC Corporation (FMC) conducted remedial measures outlined in the *2007 Early Action Work Plan, Revision No. 1* (Work Plan) and in the *Revised Addendum 1 to the August 2007 Early Action Work Plan* (Addendum) for properties near FMC's pesticide formulating facility in Middleport, New York (herein "Facility"). The 2007 Early Action remedial work was performed under the terms and conditions of an Administrative Order on Consent (AOC), Docket No. II RCRA-90-3008(h)-0209, entered into by FMC Corporation, the United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) (the latter two entities are jointly referred to hereafter as "the Agencies"), effective July 2, 1991.

The 2007 Early Action remedial work involved several areas, including the Wooded Parcel of the North Commercial/Industrial Area (see Figure 1). This parcel is located on Elizabeth Street and is designated as Village of Middleport tax parcel #086.17-1-77. Prior to implementation of the Early Action remedial work in 2007, this parcel was heavily wooded. The trees and other large vegetation (e.g., bushes) were removed as part of the work. Therefore, while the parcel may now be more accurately described as the "formerly Wooded Parcel," for consistency it will be referred to in this document as the "Wooded Parcel."

Following review and discussion with stakeholders in the community, including the Middleport Community Input Group (MCIG), the affected property owner, and owners of adjacent properties, submittal of scopes of work and work plans to the Agencies and revisions in response to comments from the Agencies, FMC submitted the Work Plan and Addendum, which were approved by the Agencies. As described in Section 2.2, the 2007 Early Action remedial work was initially implemented at the Wooded Parcel between August 2007 and December 2007. At the conclusion of the 2007 work, temporary sediment and erosion control measures were installed on the Wooded Parcel at the request of the Agencies pending re-establishment of vegetation, and were maintained and inspected on a monthly basis through July 2008. The balance of the 2007 Early Action remedial work was completed between August to October 2008. Details on implementation of the 2007 Early Action remedial work are described in the *2007 Early Action Construction Report* ("Construction Report").

The approved Work Plan stated that FMC would prepare a Site Management Plan (SMP) for the Wooded Parcel that addresses the following:

- Procedures and schedule for inspection of the engineered cover system
- Description of routine maintenance activities (i.e., mowing of the grass cover) and associated schedule
- Preliminary cost estimate for the performance of long-term inspection and maintenance activities, including financial assurance consistent with the requirements presented in 6 NYCRR Part 373-2.8
- Notification concerning activities that involve disturbance of the engineered cover system and a description of procedures for the handling of soil below the engineered cover and responsibilities related to the management of such soil
- Schedule for the annual certification that the institutional controls and engineered cover system remain in place and continue to be protective of public health and the environment

A plan titled *North Commercial/Industrial Area Wooded Parcel Site Management Plan Relative to 2007 Early Action Remedial Work* ("SMP") was developed by FMC to address all the requirements listed above. The Agencies, in consultation with the New York State Department of Health (NYSDOH), approved the SMP by letter dated May 19, 2009.

Section 6.1 of the SMP specified that after one year of quarterly events, FMC would review the analytical data and evaluate whether modification of the monitoring activities (e.g., frequency of events, scope of analyses) described in the plan was appropriate. Based on review of the results of five quarterly events (second, third and fourth calendar quarters of 2009 and first and second calendar quarters of 2010), FMC identified proposed modifications to the monitoring activities. By letter dated August 23, 2010, FMC submitted a request to the Agencies to discontinue stormwater sampling in catch basin CB-S6. By letter dated February 23, 2011, the Agencies advised that they did not grant this request, but did approve a reduction in the monitoring from quarterly to annually, with implementation of this revision beginning in the first calendar quarter of 2011. This revision is reflected in the remainder of this SMP.

In addition to requiring the preparation of this SMP, the Work Plan states that an Environmental Easement will be established for the Wooded Parcel between the owner

of the parcel and the NYSDEC and that the deed for the property will contain a notice that the property is subject to the Environmental Easement. Subsequent to submittal of a draft Environmental Easement to the Agencies in January 2008, FMC and the NYSDEC discussed the use of alternative legal mechanisms to establish property use restrictions. As a result of these discussions, the owner of the Wooded Parcel executed a Declaration of Covenants and Restrictions, which was recorded at the Niagara County's Clerk Office on August 26, 2009 (see Appendix A). FMC has otherwise entered into an Access Agreement and Easement with the owner of the Wooded Parcel, which Access Agreement and Easement describes the condition of the property and remedial work that has now been implemented. The Access Agreement and Easement was recorded with the Niagara County Clerk's office on August 10, 2007, and Amendment No. 1 to the Access Agreement and Easement was recorded on August 26, 2009 (see Appendix A).

1.2 Document Organization

The remaining sections of this SMP are organized as follows:

- Section 2 – Background: Provides a description of the Wooded Parcel, a summary of the 2007 Early Action remedial work that was performed at the Wooded Parcel and the analytical data for soil that remains at the Wooded Parcel following implementation of the 2007 Early Action remedial work.

- Section 3 – SMP Financial Assurance and Communications Activities: Describes the requirements for provision of a cost estimate and financial assurance for the long term inspection and routine monitoring and maintenance activities at the Wooded Parcel, FMC contact information, and notification requirements for the property owner and owners/operators of utilities that traverse the Wooded Parcel.

- Section 4 – Post-Construction Inspection, Monitoring and Maintenance: Describes the post-construction inspection and maintenance activities that will be performed at the Wooded Parcel to maintain the integrity and performance of the 2007 Early Action engineered cover and stormwater management systems, and stormwater sampling and analysis to be conducted.

- Section 5 – Engineered Cover System Contingencies: Describes procedures to be followed in the event that activities involving the disturbance of the engineered cover system occur or are proposed, including but not limited to handling of soil below the engineered cover, responsibilities related to the management of such soil, health and safety responsibilities, and community air monitoring requirements.

- Section 6 – Reporting and Review of Plan: Describes the requirements for reporting the results of inspections, stormwater sampling and analysis, and maintenance activities, as well as the annual certification to the Agencies.

- Section 7 – References: Provides a list of references cited in this SMP.

The discussions in the sections listed above are supported by tables, figures, and other documents presented in several appendices.

2. Background

2.1 Description of Wooded Parcel

The location of the Wooded Parcel is shown on Figure 1, and a plan of the existing features of the Wooded Parcel is provided on Figure 2. Prior to the 2007 Early Action remedial work, the Wooded Parcel was comprised of wooded, overgrown land with an abandoned, burned-out building. The Wooded Parcel is the eastern portion of the North Commercial/Industrial Area, and is approximately 3.7 acres in area. The Wooded Parcel is bounded to the east by Alfred Street and the Royalton-Hartland Central School District property, to the south by the FMC-owned North Railroad Property, to the west by the former Norco Machine Corporation Property, and to the north by Park Avenue and/or residential properties along the south side of Park Avenue. The Wooded Parcel includes an access corridor situated between two residential properties on Park Avenue that extends from the interior portions of the Wooded Parcel to the southern edge of Park Avenue. This access corridor is otherwise referred to as P14. The Wooded Parcel has been and is currently zoned for commercial and industrial uses.

The Wooded Parcel also includes the inlet section of the Village of Middleport's Culvert 105 stormwater conveyance system, originating at the North Ditch that parallels the railroad tracks on the FMC-owned North Railroad Property. The North Ditch receives stormwater runoff from the Royalton-Hartland Central School District property, agricultural fields east and northeast of the Facility, Alfred Street, the North Commercial/Industrial Area properties, and any stormwater that falls on the portion of the remediated North Railroad Property situated north of the mainline railroad track. Following the implementation of the North Railroad Property Phase 1 Interim Corrective Measure (ICM) remedial activities in 2005, stormwater runoff from the southern portion of the North Railroad Property and from the Plant Site does not drain to the North Ditch or Culvert 105.

Prior to implementation of the 2007 Early Action remedial activities, three stormwater catch basins were located on the Wooded Parcel. Stormwater runoff from the Wooded Parcel drained into the Culvert 105 buried pipe via these catch basins. The pathway of the Culvert 105 buried pipe and these associated catch basins were altered during the 2007 Early Action remedial work, as described in the following section.

Underground and overhead utilities and other site features that are within or adjacent to the Wooded Parcel are shown on Figure 2. The approximate location of a water line shown crossing the northern portion of the Wooded Parcel is based on information from the water line easement provided in Appendix A of this SMP.

2.2 2007 Early Action Activities at the Wooded Parcel

2007 Early Action activities completed at the Wooded Parcel included the following:

Site Preparation: All vegetation (e.g., trees, shrubs) and surface debris, including the above ground remnants of a burned-down building, were removed. The foundation structure of the burned-down building and an adjacent concrete pad were removed to a depth of 2 feet below ground surface (bgs).

Soil Excavation: Soil was removed to a minimum depth of 2 feet bgs throughout the Wooded Parcel. Soil was removed to a depth of approximately 4 feet bgs from an approximate 20-foot wide strip along the eastern and southern property boundaries. Excavated soil and debris, which were determined to be entirely non-hazardous, were transported to and placed within the Eastern Surface Impoundment (ESI) Fill Area at the FMC Facility. Other materials, such as construction and demolition debris, were sorted and properly disposed off-site.

Engineered Cover System: Following completion of soil removal activities, a minimum 2-foot-thick engineered soil cover system was constructed over the entire Wooded Parcel. With the exception of the area on the southern property boundary affected by the North Ditch Extension (see below), the engineered soil cover system consists of a minimum of 2 feet of clean imported fill material (e.g., general fill overlain with topsoil or crushed stone), underlain with an orange-colored demarcation material (either snow fence or geotextile fabric). These areas were then either vegetated with grass or covered with stone (see Figure 2).

North Ditch Extension: The North Ditch was extended approximately 270 feet to the west (referred to hereinafter as the North Ditch Extension), along the shared boundary of the FMC-owned North Railroad Property and the Wooded Parcel. The North Ditch Extension was covered with a minimum 2-foot-thick engineered cover system that was consistent with the cover system installed in the remainder of the North Ditch during the 2005 Phase 1 ICM for the North Railroad Property (Phase 1 ICM). The engineered cover system within the North Ditch Extension (and the remainder of the North Ditch) consists of (from bottom to top) a geosynthetic clay liner (GCL), general fill, a non-woven geotextile fabric, and riprap/coarse stone.

Culvert 105 Inlet Relocation: The Culvert 105 inlet was relocated from the west end of the North Ditch prior to extension of that ditch. Relocation of the Culvert 105 inlet involved the following activities:

Abandoning a portion of Culvert 105 piping from the former inlet to catch basin CB-2 in-place by backfilling with clean flowable fill.

Replacing catch basin CB-2. A new catch basin was installed that consisted of a 5-foot-square precast concrete catch basin. An orifice plate (i.e., a galvanized steel plate with an 18-inch-diameter opening) was installed on the interior face of the north wall of the new catch basin CB-2 at the request of the Village engineer to correspond to the inlet capacity of the original 18-inch-diameter Culvert 105 piping that was replaced.

Installing a new storm sewer pipe from Culvert 105 inlet to CB-2. A new 24-inch-diameter corrugated, smooth-bore high-density polyethylene (HDPE) pipe was installed from the new Culvert 105 inlet at the North Ditch Extension to catch basin CB-2.

Replacing storm sewer pipe between CB-2 and CB-S6. A new 24-inch-diameter corrugated smooth-bore HDPE pipe was installed between catch basins CB-2 and CB-S6.

Removing sediment from catch basin CB-S6. Sediments were removed from catch basin CB-S6 using a vacuum truck, solidified, and properly disposed off-site.

Fence: An existing chain-link fence, which had been installed along the north side of the North Ditch at the southeastern portion of the Wooded Parcel, was extended along the north side of the entire length of the new North Ditch Extension. The fence is intended to minimize access to the lined North Ditch Extension and the mainline railroad tracks.

Landscaping: To provide a visual barrier between the residential properties along Park Avenue and the FMC facility, trees were installed on the Wooded Parcel, including a row of arborvitae trees along the north side of the entire length of the new North Ditch Extension, and a row of pine trees along Alfred Street to the east (see Figure 2).

2.3 Soil Analytical Data

Soil samples were collected at the Wooded Parcel between 1986 and 2007 and analyzed for arsenic, chlorinated pesticides, and other metals. Following completion of the 2007 Early Action soil removal activities, a minimum of the upper 2 feet of soil at the Wooded Parcel comprises clean backfill materials (e.g., sand, topsoil). The analytical data for the clean backfill materials of the engineered cover system and for soil that remains below the engineered cover system are summarized in Appendix B of this SMP.

3. SMP Financial Assurance and Communications Activities

The subsections below describe: 1) the cost estimate and financial assurance for the long-term inspection and routine monitoring and maintenance activities; 2) the SMP communications, including distribution of the SMP and FMC contact information; and 3) the requirements for notification of activities that involve disturbance of the engineered cover system required for the property owner and owners/operators of utilities that traverse the Wooded Parcel.

3.1 Cost Estimate and Financial Assurance

A preliminary cost estimate for the performance of long-term inspection and maintenance activities specified in this SMP was provided to the Agencies with the transmittal of this SMP by letter dated April 24, 2009. The cost estimate will be revised when necessary. FMC will establish a financial assurance instrument based on the cost estimate, consistent with 6 NYCRR Part 373-2.8, within 60 days of receipt of the Agencies' approval of the cost estimate.

3.2 SMP Communications/FMC Contact

Upon the Agencies' approval of the April 2009 SMP by letter dated May 19, 2009, FMC provided a copy of the SMP to the owner of the Wooded Parcel and to current owners/operators of the utilities (i.e., the Village of Middleport, National Grid and NYSEG) that traverse the Wooded Parcel. FMC is providing a copy of this updated SMP (Revision No. 1) to the owner of the Wooded Parcel and to current owners/operators of the utilities that traverse the Wooded Parcel. In the future, FMC will provide a copy of the SMP to any new property owner or utility owner/operator and will provide copies of any approved modifications of the SMP to the property owner and utility owners/operators.

FMC has designated the following local representatives to be contacted for environmental health and safety concerns and questions regarding this SMP:

Organization	Contact	Phone Number/ E-mail Address
FMC Corporation 100 Niagara Street Middleport, New York 14105-1398	Robert Wojcik Environmental Manager	716-735-6301 robert.wojcik@fmc.com
	Community Voice Message Box	716-735-9769 Please leave a message and an FMC representative will return your call
	Andrew Twarowski Plant Manager	716-735-6314

Current contacts for utilities at the Wooded Parcel include the following:

Organization/Utility	Current Contact	Contact Information
Village of Middleport (Culvert 105 and water line)	Dan Dodge, Village Coordinator Village of Middleport	24 Main Street Middleport, NY 14105-0186 716.735.3303
National Grid (electric line)	Kim Stein, Consumer Representative Regional Services National Grid Mark Agle, Lead Supervisor Real Estate Asset Management National Grid	144 Kensington Avenue Buffalo, NY 14214-2799 716.831.7757 kim.stein@us.ngrid.com 93 Dewey Avenue Buffalo, NY 14214 mark.agle@us.ngrid.com
NYSEG (natural gas line)	Joseph Simone, P.E. Manager Environmental Compliance, Team NY NYSEG	P.O. Box 5224 18 Link Drive Binghamton, NY 13902-5224 607.762.7498 jmsimone@nyseg.com

3.3 Notifications by Property Owner and Utility Owners/Operators

The property owner and owners/operators of utilities that traverse the Wooded Parcel will be responsible to:

1) Notify FMC's local representatives (see Section 3.2 for contact information) at least 30 days prior to conducting any activities that may disturb the engineered cover system on the Wooded Parcel.

2) Follow procedures described in Section 5 when performing any activities involving disturbance of the engineered cover system.

Any activities involving the removal or disturbance of the engineered cover system must be approved by the Agencies prior to commencing any work.

4. Post Construction Inspection, Monitoring and Maintenance

This section of the SMP describes the post-construction inspection and maintenance that will be performed at the Wooded Parcel to maintain the integrity and performance of the 2007 Early Action engineered cover and stormwater management systems, and stormwater sampling and analysis to be conducted. Table 1 summarizes the frequency of the inspection and stormwater sampling activities presented in this SMP.

4.1 Inspection Activities

The Inspection, Monitoring and Reporting Schedule Summary (see Table 1) specifies the frequency for inspections of the Wooded Parcel engineered cover system, North Ditch Extension, grass-lined swale and that portion of Culvert 105 located within the Wooded Parcel (including the Culvert 105 inlet and catch basins CB-2 and CB-S6).

Personnel conducting inspection activities will complete the Pre-Inspection Checklist and the Inspection Form included in Appendix C to this SMP.

The Pre-Inspection Checklist identifies the items (i.e., notifications, past inspection reviews) that must be completed and/or reviewed prior to performing inspection activities at the Wooded Parcel. As shown on the Pre-Inspection Checklist, FMC will notify the NYSDEC field representative by either telephone or email at least three business days prior to a scheduled field inspection.

The Inspection Form will be used to document the conditions of the 2007 Early Action components at the Wooded Parcel and other inspection information such as the date and time of inspection, weather conditions, personnel involved, and visual observations. Photographs will also be taken during the inspection event.

Should inspections reveal disturbance to the grass and soil that appears to have compromised the design thickness of the engineered cover system, FMC will implement temporary, precautionary measures in the vicinity of the compromised area to mitigate trespassing or erosion of the area (e.g., by installing a safety fence and erosion and sediment controls) as deemed necessary based on the inspection findings. These temporary measures will be inspected and maintained by FMC on a monthly basis until permanent repairs are implemented. Handling of subsurface materials will be in accordance with the procedures provided in Table 2.

4.2 Engineered Cover System Maintenance Activities

Repairs and maintenance of the engineered cover system components, including the North Ditch Extension, will be performed to restore the features to their intended function.

Routine maintenance of the vegetated portions of the engineered cover system (currently, approximately 3.3 acres total in area) will consist of mowing approximately every three weeks during the growing season (late spring through early fall). The mowing and other maintenance activities that do not involve exposure to soil beneath the engineered cover system will not require a Health and Safety Plan.

Any necessary maintenance or repairs of the engineered cover system identified during the routine inspections will be conducted within the current or next construction season, unless otherwise agreed with other involved parties and the Agencies. In the interim, precautionary measures would be employed and maintained as deemed necessary (see Section 4.1 above). Notification of such maintenance or repair activities will be provided to the property owner, the Village of Middleport and to the owner/operator of any utility that would be impacted by the maintenance activities prior to implementation.

Maintenance activities that may be identified during the routine inspections may include, but are not limited to:

- Repair of holes, erosion rills, or depressions in the engineered cover system with appropriate topsoil
- Re-seeding of areas with bare vegetation to maintain the vegetative cover
- Fertilization and/or irrigation to maintain the vegetative cover

The above-listed routine items may be performed without prior approval from the Agencies. FMC will not perform any non-routine, major repairs, removal or disturbance of soil beneath the engineered soil cover system without prior approval of the Agencies. Any such activities will be performed in accordance with the procedures described in Table 2 and in Section 5. Further, any maintenance or repair activities shall be performed in such a manner as to maintain the integrity and performance of all other 2007 Early Action components (e.g., North Ditch Extension, Culvert 105), and so as not to impede drainage or cause flooding or ponding on adjacent properties.

4.3 Stormwater Management Maintenance Activities

Stormwater management features for the Wooded Parcel include the North Ditch Extension, a grass-lined swale (situated along the southwestern property boundary) and that portion of Culvert 105 located within the Wooded Parcel (including the Culvert 105 inlet and catch basins CB-2 and CB-S6). The approximate locations of the existing stormwater management features are shown on Figure 2. Construction details for these features are shown on the Record Drawings in Appendix A to the Construction Report, a copy of which is provided in Appendix D to this SMP.

Inspections will include field observation of the accumulation of debris or sediment at the grating of the catch basins, within the catch basins, or at the culvert inlet, signs of soil erosion and/or structural damage at these features, and potential signs of flooding upgradient of these features. Any observed damage to the stormwater management features and/or observed conditions that could potentially reduce their effectiveness (e.g., blockage), impede drainage or cause flooding or ponding on adjacent properties will be noted on the Inspection Form (provided in Appendix C to this SMP). Any recommended maintenance or repair will be identified on the Inspection Form.

Any necessary maintenance or repairs of the stormwater management features of the Wooded Parcel identified during the routine inspections will be conducted within the current or next construction season, unless otherwise agreed with other involved parties and the Agencies. In the interim, precautionary measures would be employed around the compromised area to mitigate trespassing or erosion of the area (e.g., by installing a safety fence and erosion and sediment controls) as deemed necessary. These temporary measures would be inspected and maintained by FMC on a monthly basis until permanent repairs are implemented. Notification of such maintenance or repair activities will be provided to the property owner and the Village of Middleport (if the Culvert 105 storm sewer system or the Village of Middleport water line would be impacted by the maintenance activities) prior to implementation. FMC has an agreement in place with the Village of Middleport in which FMC has agreed to perform maintenance and repair activities as necessary for the portion of the Culvert 105 storm sewer system located on the Wooded Parcel.

Maintenance or repairs will be performed to remove accumulated sediments and/or debris from these features, as necessary. These materials will be disposed of at an appropriate off-site facility authorized to receive the materials. Maintenance activities that may be identified during the routine inspections may include, but are not limited to:

- Repair/replacement of missing or damaged engineered cover materials (e.g., rip-rap, gravel, general fill) and/or geosynthetic materials (e.g., geotextile, GCL) along the North Ditch Extension

- Repair of damaged Culvert 105 catch basins and/or pipe sections

4.4 Stormwater Sampling

Stormwater samples will be collected from catch basin CB-S6 on the Wooded Parcel, on an annual basis, in accordance with the stormwater sampling procedure provided in Appendix C. Stormwater sampling will be conducted during the first calendar quarter of each year, if feasible. If stormwater samples cannot be collected during the first calendar quarter, then sampling will be attempted during the subsequent quarter (and thereafter, as needed) with the objective of obtaining stormwater samples from CB-S6 once within the calendar year.

Stormwater sampling will be performed when sufficient stormwater is observed flowing through the catch basin. Weather conditions (i.e., rainfall amounts, temperature, etc.) on the day of sampling and two days preceding sampling will be documented. The sample will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory for analysis of the following constituents and parameters by the indicated methods:

- total and dissolved arsenic (USEPA SW-846 Method 6010B)
- total and dissolved lead (USEPA SW-846 Method 6010B)
- total dissolved solids (Standard Methods for the Examination of Water and Wastewater [SMEWW] Method 2540C)
- total suspended solids (SMEWW Method 2540D)
- hardness (SMEWW Method 2340C)
- total and dissolved specific chlorinated pesticides (4,4'-DDT, 4,4'-DDD, 4,4'-DDE, dieldrin, and BHC isomers) (USEPA SW-846 Method 8081A)

5. Engineered Cover System Contingencies

This section of the SMP presents contingencies for addressing disturbance of the subsurface soils at the Wooded Parcel, under the following foreseeable potential scenarios:

1) accommodating any construction projects involving excavation of soil beneath the engineered cover by the owner of the Wooded Parcel;

2) maintaining/repairing existing utilities situated on the Wooded Parcel. National Grid overhead power lines, a Village of Middleport water supply line, and a NYSEG natural gas line are located on the Wooded Parcel as shown on Figure 2; and/or

3) performance of major maintenance activities that involves disturbance soil beneath the engineered cover system by FMC. Each of these scenarios and the contingencies dealing with the scenarios are summarized below.

Prior to performance of the above specified activities, the owner of the Wooded Parcel or utility owners/operators are to notify FMC as specified in Section 3 of the SMP. FMC will inform the Agencies as to the scope of the project and obtain approval of the Agencies prior to commencing any work. FMC will work with the property owner and owners/operators of the utilities on the Wooded Parcel to minimize any effect on the engineered cover and any potential exposures to contaminated soil beneath the engineered cover.

If the engineered cover must be removed/disturbed by the owner of the Wooded Parcel or by the utility owners/operators, FMC will observe the work to ensure that the engineered cover system is repaired/restored to the original specification. Upon completion, FMC will provide a certification, by a Professional Engineer licensed to practice in New York State, that the engineered cover system was reconstructed or repaired in accordance with original design specifications or any modifications that have been approved by the Agencies.

When the scope of a project includes disturbance of soil beneath the engineered cover, a Health and Safety Plan (HASP) will be required. The contractor or entity conducting the work will be responsible for preparation of a project-specific HASP in accordance with the applicable OSHA rules and regulations, and will be responsible for the health and safety of its workers.

When the scope of a project includes disturbance of soil beneath the engineered cover, FMC will perform community air monitoring to confirm that the community would not be adversely impacted. The community air monitoring will be performed following the procedures specified in the Community Air Monitoring Plan (CAMP) developed for the 2007

Early Action activities. A copy of the CAMP is provided in Appendix E, and the provisions of the CAMP are summarized in Table 3.

The soil management procedures outlined in Table 2 of this SMP will be followed by FMC in the event a third party performs any construction activities to the engineered cover system as described above. FMC will dispose of any excess soil that can not be returned to the excavation and any soil excavated from beneath the engineered cover system that is discolored, or exhibits an odor that suggests it may be contaminated with unknown material or may be hazardous, at an appropriate off-site facility.

6. Reporting and Review of Plan

This section outlines the requirements for reporting the results of inspections, stormwater sampling and maintenance activities, as well as the annual certification to the Agencies. The reporting frequencies outlined below are summarized in Table 1.

6.1 Inspections, Monitoring and Maintenance Reporting and Review of Plan

Semi-annual inspection and maintenance activities performed at the Wooded Parcel will be documented on the Field Inspection Form and will be provided to the property owner and the owner/operator of any utility within the Wooded Parcel.

Within 90 days after the date of the inspection, monitoring and/or maintenance event, the following will be submitted to the Agencies:

- A copy of the completed Inspection Form that documents the conditions observed and the sampling conducted (if any)
- A table summarizing the analytical data (the laboratory analytical reports will be maintained in FMC's records)
- A brief summary of maintenance activities conducted (if any)

In addition, FMC will review the analytical data and evaluate whether modification of the inspection and monitoring activities (e.g., frequency of events, scope of analyses) described in this SMP is appropriate. Any proposed modifications will be submitted to the Agencies for approval prior to implementation.

6.2 Annual Certification

FMC will submit to the Agencies an annual certification that the institutional controls (i.e., access agreement and easement) and engineering controls (e.g., engineered cover system) remain in place and continue to be protective of public health and the environment. The annual certification will cover the reporting period of one calendar year (ending December 31) and will be submitted to the Agencies in the first quarter of the following year. The annual certification will be signed by a Professional Engineer licensed to practice in New York State, and will include the following:

- A figure depicting site features
- A summary of dates that inspections were performed

- A description of engineered cover system reconstruction activities conducted in response to a third party (i.e., property owner or public utilities), if any
- A description of repairs made to the engineered cover (if any)
- A description of maintenance/repairs to Culvert 105 (if any)
- A copy of the completed inspection forms for the time period covered by the annual certification
- Comments, conclusions or recommendations based on a review of the findings of the inspection reports
- A description of existing institutional controls (i.e., FMC access agreement and other legal mechanisms) in place for the Wooded Parcel and summary of any changes to the controls and to the usage of the property from previous years

7. References

Agencies. 2009. Letter to Brian McGinnis, FMC Corporation, from Matt Mortefolio, NYSDEC and Michael Infurna, USEPA, providing approval of the SMP. Letter dated May 19, 2009.

Agencies. 2011. Letter to Brian McGinnis, FMC Corporation, from Matt Mortefolio, NYSDEC and Michael Infurna, USEPA, in response to FMC's request for modification to monitoring activities. Letter dated February 23, 2011.

ARCADIS. 2009a. *2007 Early Action Construction Report*, dated February 2009. Prepared for FMC Corporation, Middleport, NY.

ARCADIS. 2009b. *North Commercial/Industrial Area Wooded Parcel Site Management Plan Relative to 2007 Early Action Remedial Work*, dated April 2009. Prepared for FMC Corporation, Middleport, NY.

ARCADIS BBL. 2007a. *2007 Early Action Work Plan, Revision No. 1*, dated August 2007. Prepared for FMC Corporation, Middleport, NY.

ARCADIS BBL. 2007b. *Revised Addendum 1 to the August 2007 Early Action Work Plan*, dated September 2007. Prepared for FMC Corporation, Middleport, NY.

FMC Corporation. 2010. Letter to Matt Mortefolio, NYSDEC and Michael Infurna, USEPA from Brian McGinnis, FMC Corporation, requesting modification to monitoring activities. Letter dated August 23, 2010.

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Tables

TABLE 1
INSPECTION, MONITORING AND REPORTING SCHEDULE SUMMARY
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN
RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK

FMC CORPORATION – MIDDLEPORT, NEW YORK

Activity	Monitoring Frequency
Feature to be Inspected	
Engineered Cover System Soil Covered Area	Semi-annually
Engineered Cover System Gravel Covered Area (1)	
North Ditch Extension	
Culvert 105 Inlet	
Catch Basin CB-2	
Catch Basin CB-S6	
Grass-lined Swale	
Chain Link Fence	
Mowing of Grass	Approximately every three weeks during the growing season (i.e., late spring through early fall)
Stormwater Sampling and Analysis	Annually (2)

Notes:
1. The gravel cover on the western side of the Wooded Parcel is temporary, and will be replaced with a vegetated soil cover upon completion of corrective measures implementation in the Suspected Air Deposition and Culvert 105 Study Areas.
2. From the second calendar quarter 2009 through the first calendar quarter 2011, stormwater sampling in catch basin CB-S6 was conducted quarterly. Beginning in the first calendar quarter 2011, stormwater sampling is conducted annually. Stormwater sampling is to be conducted during the first calendar quarter of each year, if feasible. If stormwater samples cannot be collected from CB-S6 during the first calendar quarter, then the location will be checked and a sample collected during the subsequent quarter (and thereafter, if needed), with the objective of obtaining stormwater samples from CB-S6 once within the calendar year.

REPORTING SCHEDULE

Reporting Requirement	Frequency
Summary table of laboratory data analysis results	Annually
Inspection Forms	Semi-annually
Annual Certification that the institutional controls and engineered cover system remain in place and continue to be protective of public health and the environment.	Annually, during the first calendar quarter, for the prior calendar year

TABLE 2
SOIL MANAGEMENT PROCEDURES
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN
RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK

FMC CORPORATION - MIDDLEPORT, NEW YORK

The engineered cover system at the Wooded Parcel consists of a minimum of 2 feet of clean imported fill material (e.g., general fill overlain with topsoil and grass or with crushed stone), which is underlain with an orange-colored demarcation material (either snow fence or geotextile fabric). In the event of excavation/disturbance of fill material that is part of the engineered cover system, the engineered cover system shall be restored to its original condition following completion of these activities within the current/next construction season, unless otherwise agreed with other involved parties and the Agencies. In the interim, precautionary measures would be employed around the compromised area to mitigate trespassing or erosion of the area (e.g., by installing a safety fence and erosion and sediment controls) as deemed necessary. These temporary measures would be inspected and maintained by FMC on a monthly basis until permanent repairs are implemented.

In the event of excavation/disturbance of soil that is below the engineered cover system for limited activities such as repair of the engineered cover system, replacement of a portion of the Culvert 105 storm sewer system, utility work, or installation of any structures, the following procedures shall be followed.

1. Temporary Staging: Soil that is removed from beneath the engineered cover system shall be temporarily staged either in a container or on top of 6-mil plastic sheeting to keep it separate from the cover material. If said soil is not returned to beneath the engineered cover system at the end of the work day, then it shall be covered with plastic sheeting and secured to prevent migration by water or wind.
2. Restoration of Soil: If feasible, soil excavated from beneath the engineered cover system shall be returned to the same location. If contaminated material is removed from below the demarcation layer that is deemed non-hazardous and it is not placed back below the demarcation layer, that material will be disposed of at an authorized facility(ies). If the excavated soil is discolored or exhibits an odor that suggests it may be contaminated with unknown material or may be hazardous, then the soils shall not be placed back in the excavation – these soils will be subject to proper management and disposal at an appropriate off-site facility by FMC. Under no circumstances will soil removed from beneath the engineered cover system be spread out atop the cover. Soil/gravel materials removed from atop the engineered cover system may be used to reconstruct the cover provided the materials meet original specification and there is no reason to suspect that these materials are contaminated.
3. Disposition of Excess Soil: If soil cannot be returned beneath the engineered cover system, then this soil shall be disposed at an appropriate off-site facility.
4. Restoration of Cover System: Upon completion of the excavation/disturbance activities, the engineered cover system shall be restored to its original condition.

These procedures are not intended to cover the range of requirements that would be needed in the event of large-scale excavation of the Wooded Parcel as might occur during potential future redevelopment. In this case, additional work plans and precautions are expected to be required, such as a soil management plan, health and safety plan, air monitoring plan, and/or stormwater pollution prevention plan.

TABLE 3
SUMMARY OF COMMUNITY AIR MONITORING PLAN (CAMP) REQUIREMENTS
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK

FMC CORPORATION - MIDDLEPORT, NEW YORK

Item	Monitoring Requirement	Wooded Parcel (see note 3)	Applicability	Action Levels	Reporting / Notification
1	**VOCs:** Real Time Monitoring (using PID)	• **PID available** for use if odor or unknown materials are encountered (VOCs not expected)	• during all soil handling and ground intrusive activities, including, but not limited to, soil excavation, handling, removal, backfilling, grading and compaction.	• as measured with **PID**: • 5 to 25 ppm: temporary work halt, identify source and abate • above 25 ppm: shut down work and implement emission control measures	• **if PID is used**, monitoring results each day to DEC field rep
2	**Airborne Particulates:** Real Time Monitoring (using dust monitor)	• **one upwind** station continuous • **two downwind** stations continuous • **one additional** station at work area perimeter when working **proximate to occupied residence** • **one additional** station at work area perimeter when working **proximate to street** • where requirements would result in duplicate air monitoring stations, stations may be combined into a single station to serve both purposes	• during all soil handling and ground intrusive activities, including, but not limited to, soil excavation, handling, removal, backfilling, grading and compaction.	• as measured for particulate matter less than 10 microns in size (**PM-10**): • **above 100 ug/m^3 or dust observed leaving work area:** employ dust suppression techniques • **above 150 ug/m^3 with dust suppression techniques:** stop work and re-evaluate • **above 150 ug/m^3 between work area perimeter and nearest wall of occupied structure and/or nearest intake vent:** suspend work and implement additional dust suppression techniques	• monitoring results **daily** to DEC field rep
3	**Airborne Particulates:** Documentation Sampling and Laboratory Analysis	• one sample at **each** location where real time particulate monitoring is performed (for frequency of sample collection refer to "Applicability" column) • all samples analyzed at laboratory for arsenic	• **prior to** start of any work to establish background (upwind only) • **daily during first week** of work (all locations) • **weekly after** the first week	• compare to **background** results	• laboratory data to DEC field rep **as received**

General Notes:
1. Table does not include separate requirements for worker breathing zone air monitoring.
2. Wind direction to be measured at the start of each work day and periodically using wind sock, wind vane or other appropriate equipment. Upwind and downwind monitoring stations may need to be relocated if a significant shift in wind direction occurs.

Specific Notes:
3. Reference the following:
2007 Early Action Work Plan CAMP , *Revision No. 1* , August 2007, ARCADIS BBL and Field Modification No. 11 dated August 25, 2008

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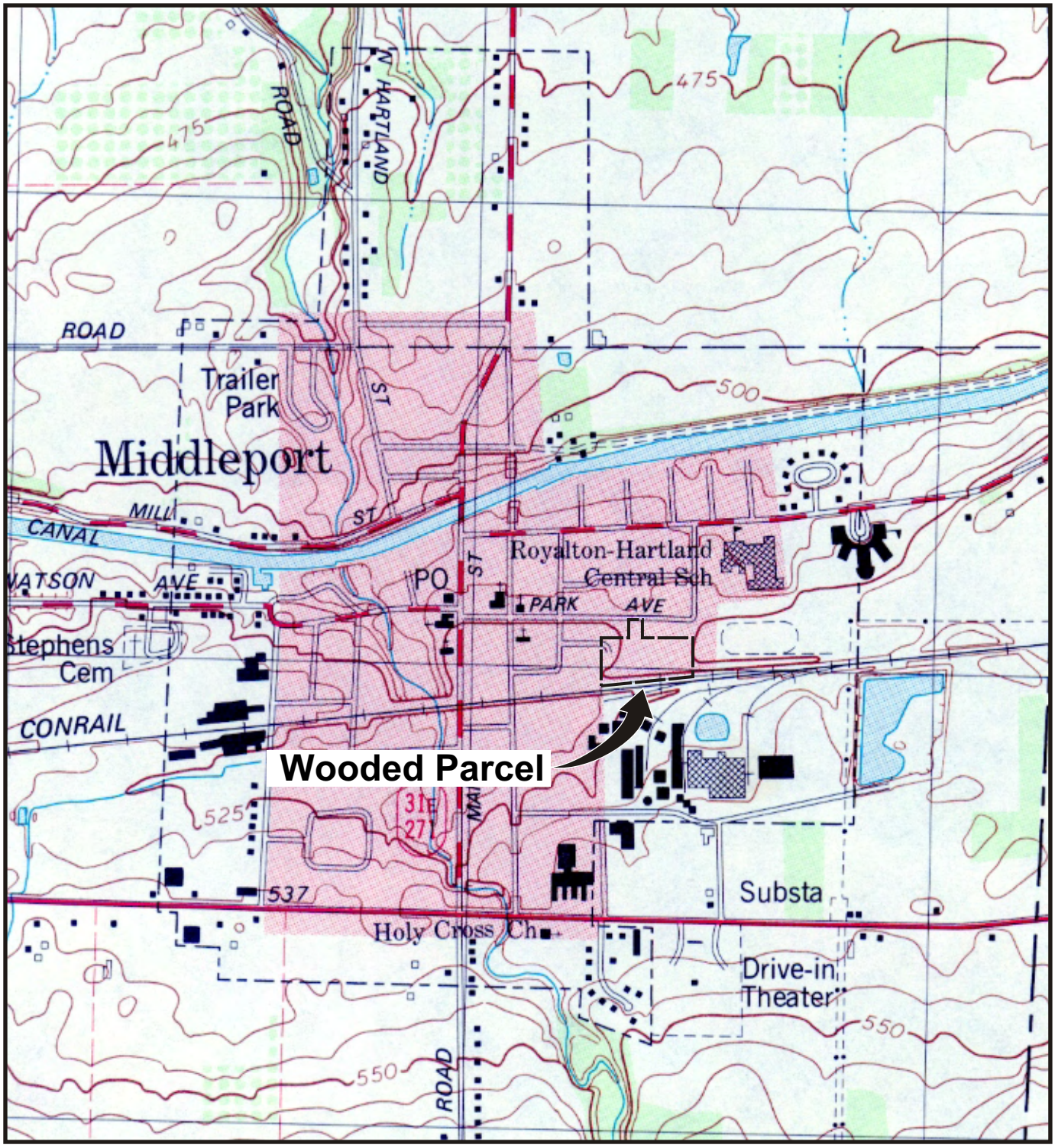
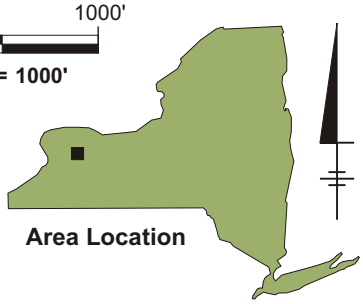
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., MEDINA, NY, 1980.

1000' 0 1000'

Approximate Scale: 1" = 1000'



FMC CORPORATION
MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA
WOODED PARCEL - SITE MANAGEMENT PLAN

LOCATION MAP

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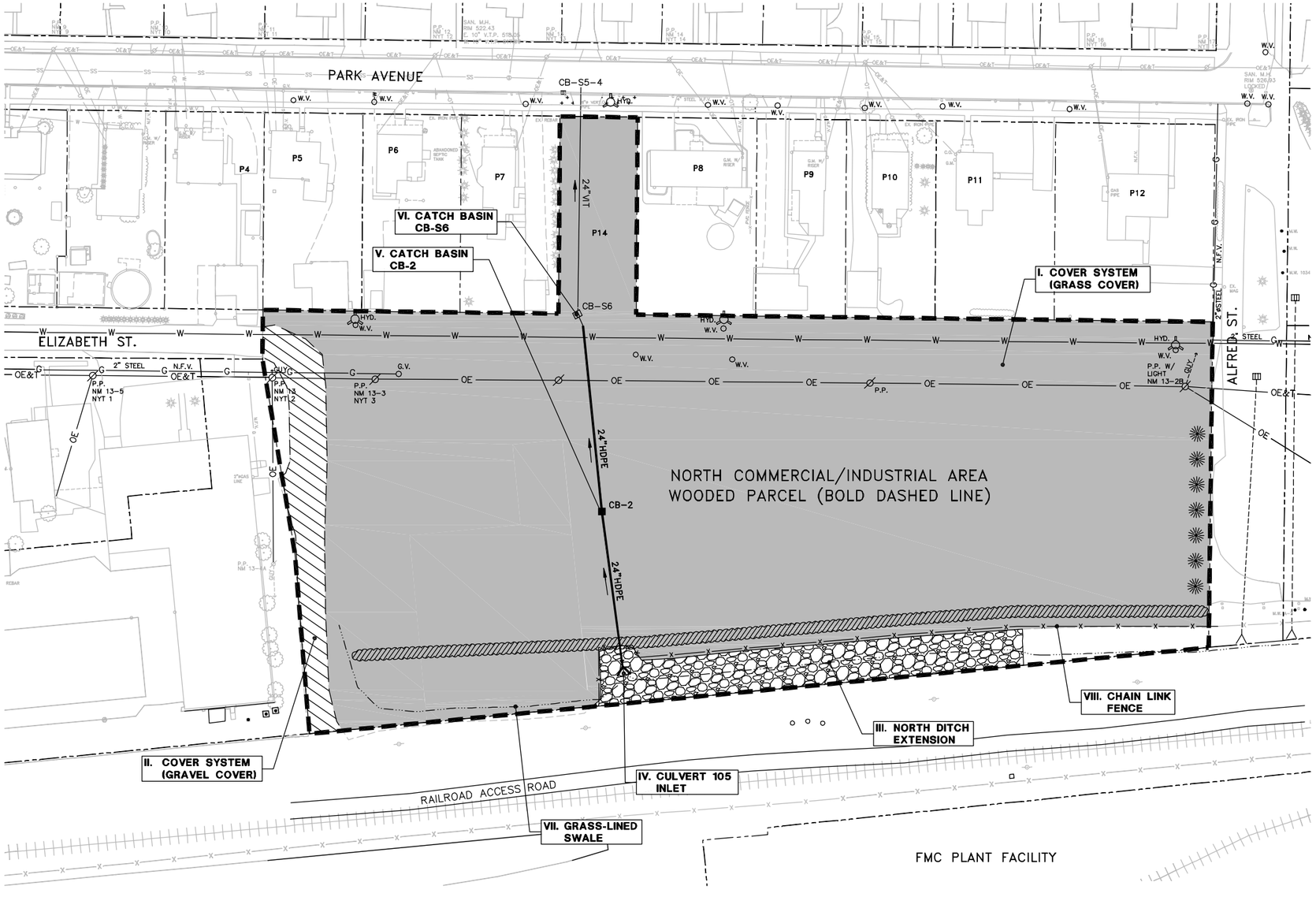
FIGURE
1

04/22/09 SYRACUSE-141ENV-DHOWES
B0037736/0000/00017/CDR/37736n01.cdr



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE WOODED PARCEL BOUNDARY
- I. COVER SYSTEM (GRASS COVER) — INSPECTION FORM ITEM AND ITEM NUMBER
- CHAIN LINK FENCE
- LIMIT OF ENGINEERED COVER SYSTEM (GRASS COVER)
- LIMIT OF ENGINEERED COVER SYSTEM (GRAVEL COVER)
- LIMIT OF RIPRAP/NORTH DITCH EXTENSION
- VISUAL BARRIER TREES (SPRUCE)
- VISUAL BARRIER TREES (ARBORVITAE)
- HYDRANT
- WATER VALVE
- WATER LINE (SEE NOTE 2)
- POWER POLE
- OVERHEAD ELECTRIC
- OVERHEAD ELECTRIC & TELEPHONE
- GAS VALVE
- GAS LINE
- CB-S6 — CATCH BASIN AND ID
- HDPE — HIGH DENSITY POLYETHYLENE
- VIT — VITRIFIED CLAY PIPE
- FLOW DIRECTION

NOTES:

1. SURVEY INFORMATION SHOWN ON THIS DRAWING WAS COMPILED FROM OCTOBER 12, 2005, MAY 10, 2007, AND DECEMBER 13, 2007 FIELD SURVEYS PERFORMED BY MCINTOSH AND MCINTOSH, P.C., AND A 2002 AERIAL SURVEY PROVIDED BY ABRAMS AERIAL SURVEY CORPORATION. THE HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983 (NAD83). ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29).
2. THE LOCATION OF THE WATER LINE THAT CROSSES THE NORTHERN PORTION OF THE WOODED PARCEL IS APPROXIMATE, AND IS BASED ON THE WATER LINE EASEMENT INFORMATION PROVIDED IN APPENDIX A OF THE "NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL SITE MANAGEMENT PLAN RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK" (ARCADIS 2009).
3. PRIOR TO IMPLEMENTATION OF THE EARLY ACTION REMEDIAL WORK IN 2007 THIS PARCEL WAS HEAVILY WOODED. THE TREES AND OTHER VEGETATION WERE REMOVED AS PART OF THE WORK. FOR CONSISTENCY, IT IS REFERRED TO AS THE "WOODED PARCEL".
4. LOCATIONS OF FEATURES INSTALLED DURING THE 2007 EARLY ACTIONS (i.e., INSPECTION FORM ITEMS) ARE APPROXIMATE. REFER TO THE RECORD DRAWINGS PROVIDED IN APPENDIX A OF THE "2007 EARLY ACTION CONSTRUCTION REPORT" (ARCADIS 2010).
5. THE GRAVEL COVER ON THE WESTERN SIDE OF THE WOODED PARCEL IS TEMPORARY AND WILL BE REPLACED WITH THE GRASS COVER IN THE FUTURE, UPON COMPLETION OF CORRECTIVE MEASURES IMPLEMENTATION IN THE SUSPECTED AIR DEPOSITION AND CULVERT 105 STUDY AREAS.

0 40' 80'
GRAPHIC SCALE

FMC CORPORATION
MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL - SITE MANAGEMENT PLAN

WOODED PARCEL SITE PLAN

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FIGURE
2

CITY:SYRACUSE,NY DIV/GROUP:ENV/CADD DB:A.SAMOS, P.LISTER LD:P.LISTER PM:D.WRIGHT LYRON=OFF=REF (FRZ)
G:\ENV\CAD\SYRACUSE\ACT\B0037755\0001\000003\DWG\377556B01.DWG LAYOUT: 2 SAVED: 3/29/2011 10:06 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTQUICKBW.CTB PLOTTED: 3/29/2011 10:07 AM BY: LISTER, PAUL
XREFS: 377636X01 377636X00
IMAGES: PROJECTNAME: ---

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Appendices

A – Access Agreements and Easements

B – Analytical Data for Soil that Remains Following 2007 Early Action Activities

C – Pre-Inspection Checklist, Inspection Form, and Stormwater Sampling Procedure

D – Copies of Record Drawings for the Wooded Parcel from the 2007 Early Action Construction Report

E – Early Action Community Air Monitoring Plan

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Appendix A

Access Agreements and Easements

SEAMAN, JONES, HOGAN & BROOKS, LLP

Attorneys at Law

DANIEL E. SEAMAN
MORGAN L. JONES, JR.
F. GERARD HOGAN
MATTHEW E. BROOKS

PHILIP S. CHAMOT
MICHAEL E. BENEDICT
MICHAEL J. NORRIS

76 WEST AVENUE
LOCKPORT, NEW YORK 14094
716-433-5907
FAX 716-433-0032
e-mail: danseaman@lockportlaw.com

WILLIAM B. MAY, Retired
WILLIAM H. EARL (1913-2007)
J. F. HENRY DELANGE (1914-2001)
PAUL H. SEAMAN (1911-1986)

September 12, 2008

Daniel A. Dodge,
Village Coordinator
Village of Middleport
24 Main Street
P.O. Box 186
Middleport, New York 14105-0186

RE: Coe Property Easement - Waterline

Dear Mr. Dodge:

There is an easement for a waterline over and across the old Hungerford property, which was recorded in Liber 1547 of Deeds at Page 73. I also have a map and I am enclosing a copy of the map, but I am going to hold on to the original.

Very truly yours,

Daniel E. Seaman, Jr.

Daniel E. Seaman

DES:cr
Encs.

1152 AGREEMENT made this 20th day of July, 1973, by and between ROYALTON-HARTLAND CENTRAL SCHOOL, a municipal corporation having its principal offices at Middleport, New York, and BETTY B. HUNGERFORD, residing at Howell Parkway in the Village of Medina, Orleans County, New York, parties of the first part, and VILLAGE OF MIDDLEPORT, a municipal corporation located in the County of Niagara, State of New York, party of the second part.

W I T N E S S E T H:

For and in consideration of the sum of One Dollar ($1.00) in hand paid to each of the parties of the first part, the receipt whereof is hereby acknowledged and other good and valuable considerations, the parties of the first part hereby grant to the party of the second part, its successors and assigns, an easement and right of way to lay and maintain a municipal water line designed to increase pressure and provide improved service in the area of the Royalton-Hartland Central School and adjoining property upon the lands of the parties of the first part briefly described as follows:

HUNGERFORD PARCEL

$31F 094 00008.50CH

1973 JUL 31 P 12:23

A strip of land thirty-three (33) feet in width, with the north boundary, one hundred thirty-two (132) feet south of the south line of Park Avenue extending from the west bounds of the Hungerford lands at the easterly end of the paved portion of Elizabeth Street, which point is approximately two hundred ninety (290) feet east of the east line of Maple Avenue; thence easterly, with a width of thirty-three (33) feet, to the east bounds of Alfred Street, extended southerly (said extension of Alfred Street not being open or dedicated).

ROYALTON-HARTLAND CENTRAL SCHOOL PARCEL

Beginning at the northeast corner of the easement or right of way designated the "Hungerford Parcel" in the within instrument; thence easterly over the lands adjoining the presently existing school garage, said parcel having a width of approximately fifteen (15)

REAL ESTATE TRANSFER TAX STATE OF NEW YORK
Dept. of Taxation, Building & Finance 7/31/73 $00.00 OK

LIBER 1547 PAGE 73

feet, to a point twenty (20) feet east of the northeast corner of said school garage; thence generally northerly, with the easterly easement boundary remaining twenty (20) feet and no more, and said easement being twenty (20) feet in width, and generally along the easterly side of the tennis court area and the school fence constituting the west bounds of the school property, to the south line of State Street,

together with all the rights and privileges incident and necessary to the enjoyment of this grant.

In further consideration of said grant and demise, the party of the second part hereby agrees to bury said water distribution line at least three (3) feet below the surface of the ground, and in any event, at a depth sufficient to avoid interference with the ordinary and usual use of the premises. It is expressly understood and agreed that the water line to be installed and constructed is to be in approximately the location, on the school property, shown on the base line survey for said water line surveyed and drawn by D. A. Frehsee, L.S. in January, 1973. This provision does not apply to the Hungerford parcel.

The party of the second part may at any time after June 25, 1973 enter upon all easements conveyed by this instrument for the purposes of laying, relaying, removing, replacing or repairing all installations of the water line now existing or hereafter made within the bounds of the described easements. The party of the second part further covenants and agrees as follows:

a) To perform all excavating and related work in a good and workmanlike manner and perform all work necessary to return the property to its former condition.

[redacted] [redacted] [redacted]

b) To repair without cost to the Royalton-Hartland Central School any damage incurred to school property, above ground or under ground.

c) To perform the work at such a time that minimal inconvenience to the school system will occur.

d) To take all safety precautions during the construction/to conform to Village, State, County, School or other municipal requirements.

After the initial installation of the water line, the parties of the first part may at any reasonable time enter upon the easements conveyed for the purpose of relaying, removing, replacing, or repairing the installations now existing or hereafter made within the bounds of the described easements; and that no trees are to be planted by any of the parties within the bounds of said easements and that any ornamental shrubbery or bushes hereafter planted by the parties of the first part, if removed or destroyed while said water line is being repaired or replaced, need not be replanted or replaced by the party of the second part. Said party of the second part agrees, however, to make every possible effort not to interfere with the landscape effect at the time of entry on the lands forming part of the easements.

IN WITNESS WHEREOF, the parties have caused these presence to be duly signed, the corporations by their authorized officers and the respective seals of the two municipal corporations to be hereunto are duly affixed the day and year first above written.

ROYALTON-HARTLAND CENTRAL SCHOOL

By: [signature]
Authorized Officer, its President Board

Betty B. Hungerford

VILLAGE OF MIDDLEPORT

By: _____
Authorized Officer, its Mayor

STATE OF NEW YORK)
)SS:
COUNTY OF NIAGARA)

On this 26 day of July, 1973, before me, the subscriber, personally appeared BETTY B. HUNGERFORD, to me personally known and known to me to be the same person described in and who executed the within Instrument, and she duly acknowledged to me that she executed the same.

_____
Notary Public
JOHN L. SYLVESTER, Notary Public
State of New York, County of Niagara
My commission expires March 30, 1974
Reg. No. 2472

STATE OF NEW YORK)
)SS:
COUNTY OF NIAGARA)

On this 30th day of July, 1973, before me personally came Lauri D. Bellinger, to me personally known, who, being by me duly sworn, did depose and say that he resides in Hayward, New York, that he is the Board President of ROYALTON-HARTLAND CENTRAL SCHOOL, a municipal corporation described in, and which executed, the within Instrument; that he knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Education of said corporation; and that he signed his name thereto by like order.

Carrie M. Hill
Notary Public
1796493
CARRIE M. HILL, Notary Public,
State of New York
Qualified in Niagara County.
My Commission expires March 30, 1975

STATE OF NEW YORK)
)SS:
COUNTY OF NIAGARA)

On this 27th day of July, 1973, before me personally came Lawrence J. Krolak, to me personally known, who, being by me duly sworn, did depose and say that he resides in Middleport, New York, that he is the Mayor of the VILLAGE OF MIDDLEPORT, a municipal corporation described in, and which executed, the within Instrument; that he knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Trustees of said corporation; and that he signed his name thereto by like order.

Floyd W. Fladie
Notary Public

FLOYD W. FLADIE
Notary Public, State of New York
Qualified in Chemung County
My Commission expires March 30, 1975

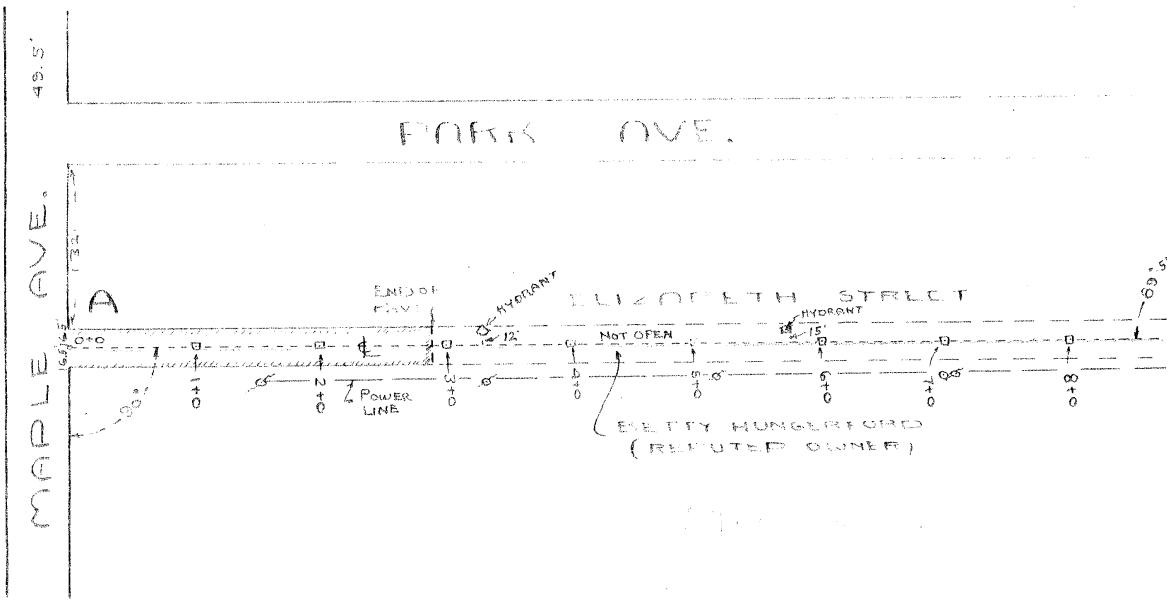
STATE OF NEW YORK
COUNTY OF NIAGARA
Recorded on the 31st. day of
July A.D. 1973 at
12:23 o'clock P. M. in Liber
1547 of Deeds
at Page 73 and examined

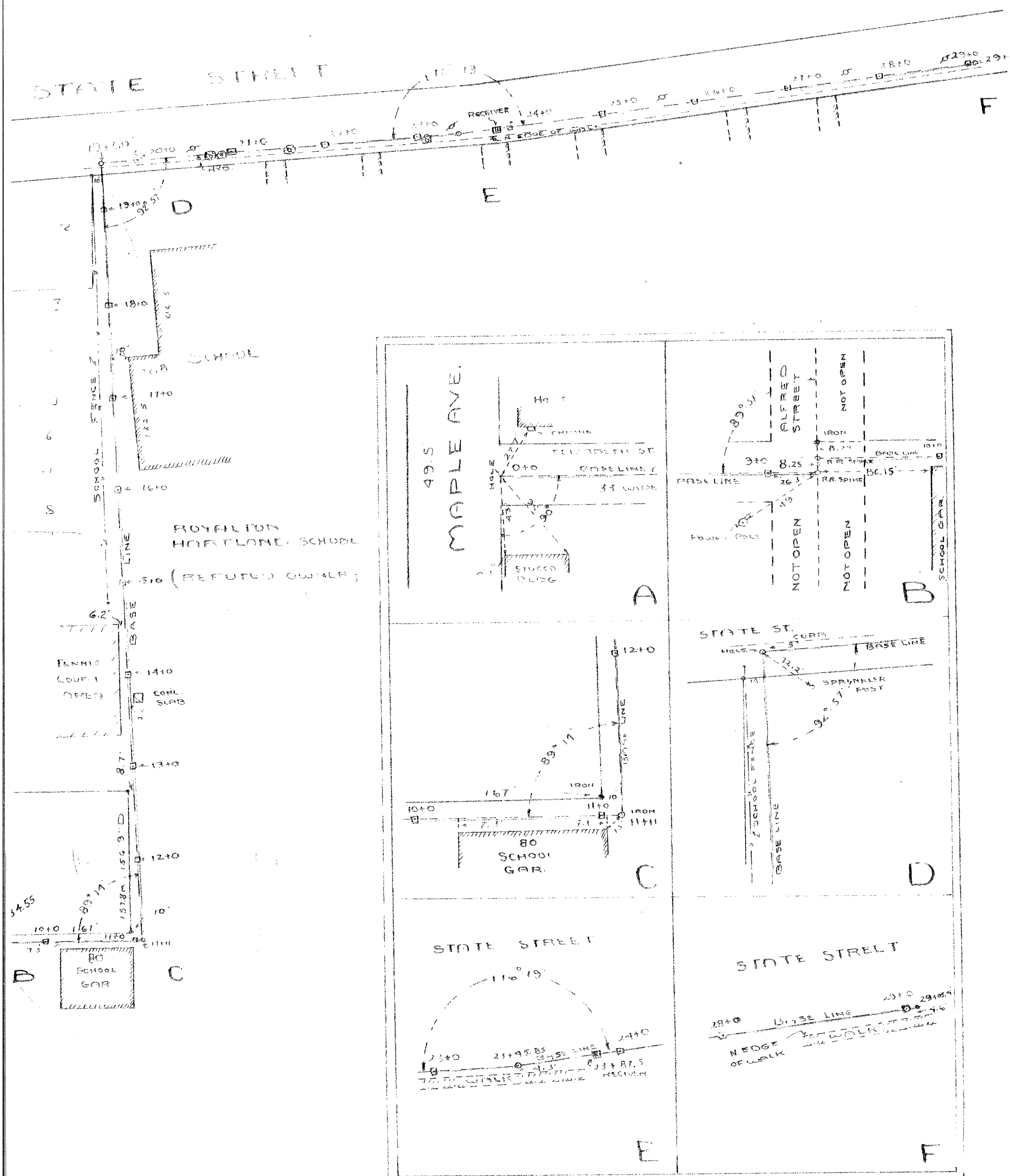
Clerk

SURVEYED AND DRAWN BY [illegible]
JANUARY 1973 - SCALE 100 FT. TO 1 INCH

VILLAGE OF MIDDLEPORT
NIAGARA COUNTY, NEW YORK.

EAST LINE SURVEY FOR WATER LINE




STATE STREET
RECEIVER
EDGE OF WALK
SCHOOL
SCHOOL FENCE
BASE LINE
ROYALTON HARTLAND SCHOOL
(REFUSED OWNER)
TENNIS COURT AREA
CONC. SLAB
80 SCHOOL GAR
MAPLE AVE.
49.5'
HOLE
STUCCO BLDG.
A
ALFRED STREET
NOT OPEN
IRON
R.R. SPIKE
BASE LINE
POWER POLE
SCHOOL GAR
B
BASE LINE
IRON
80 SCHOOL GAR.
C
STATE ST.
CURB
BASE LINE
SPRINKLER POST
SCHOOL FENCE
BASE LINE
D
STATE STREET
116° 19'
RECEIVER
E
STATE STREET
BASE LINE
N EDGE OF WALK
F

SET OUT 50' = 1"

BOOK 3409 PAGE 0044

DO NOT DETACH - THIS IS PAGE 1 OF RECORDED DOCUMENT

NIAGARA COUNTY CLERK RECORDING PAGE

OFFICE OF THE CLERK COUNTY OF NIAGARA

WAYNE F. JAGOW, COUNTY CLERK

County Courthouse, 175 Hawley Street, P.O. Box 461, Lockport, NY 14095

Phone (716) 439-7027 Fax (716) 439-7066

INSTRUMENT DATE _____

DOCUMENT TYPE Easement (10)

Parties: **(Print Names In Full)**

1st Part Sally K. Coe

2nd Part FMC Corp

Town/City _____

Return To: SML

Hodgson Russ LLP

140 Pearl Street

Buffalo, NY 14202

DOCUMENT # 1006856
BOOK 3409 PAGE 44
NUMBER OF PAGES 10 DEEDS
RECORDED 08/10/2007 10:23:28 A.M.
RECEIPT # 20661 DOCUMENT TOTAL: $65.00
PAID - COUNTY CLERK
WAYNE F. JAGOW

THIS SPACE RESERVED FOR COUNTY CLERK

MORTGAGE# _____

MORTGAGE AMOUNT

$ _____

(___)One\two family (___)Other

[ ] Check if to be apportioned

RECORDING TAX RECEIPT

BASIC	$	
ADDITIONAL	$	
SPECIAL	$	
TOTAL	$	

State of New York} ss
County of Niagara}
I do hereby certify that I have
Received on the within Mortgage, being
the amount of the Recording Tax
Imposed thereon & paid at recording.

Dated _____, 20___

Mortgage Tax Clerk of Niagara County

179
REAL ESTATE TRANSFER TAX
$ 0
8/10/07
NIAGARA COUNTY

This sheet constitutes the Clerk's endorsement required by section 319 of the Real Property Law of the State of New York

DO NOT DETACH

ACCESS AGREEMENT AND EASEMENT

ELIZABETH STREET PROPERTY
MIDDLEPORT, New York

THIS AGREEMENT ("Agreement") is made between SALLY K. COE ("Grantor") and FMC Corporation, a Delaware corporation, with offices at 1735 Market Street, Philadelphia, Pennsylvania 19103 ("FMC or Grantee").

RECITALS:

WHEREAS, FMC owns and operates a pesticide formulating facility located in Middleport, New York (the "Facility");

WHEREAS, FMC acquired in 2002 and now owns a parcel of land ("North Railroad Property") located adjacent to and immediately north of the Facility, and traversed by an active railroad (operated by Falls Road Railroad Company);

WHEREAS, FMC entered into an Administrative Order on Consent ("AOC") issued by the United States Environmental Protection Agency ("USEPA") and the New York State Department of Environmental Conservation ("NYSDEC") in 1991 under the authority of the federal Resource Conservation and Recovery Act ("RCRA") and the New York Environmental Conservation Law ("NYECL");

WHEREAS, the AOC requires among other things that FMC undertake an investigation to determine the nature and extent of any releases or hazardous waste and/or hazardous constituents ("Contaminants") from the Facility into the environment and, where necessary and as determined and directed by USEPA and NYSDEC, to take corrective action in response to conditions resulting from such releases;

WHEREAS, Grantor is the owner of real property situated off of Elizabeth Street in the Village of Middleport, Niagara County, New York, designated on the tax map of the Village of Middleport as tax map parcel number 086.17-1-77, being the same property conveyed to Grantor by deed on February 1, 1991 and recorded in the Land Records of the Niagara County Clerk at page 335 and 336, liber 2309 of Deeds, comprised of approximately 3.7 acres and legally described on Schedule A attached to and made a part of this Agreement ("the Property");

WHEREAS, FMC performed certain interim corrective measures in 2005 (2005 ICMs), as directed by the USEPA and NYSDEC, that include removal and replacement of soil on portions of the Property along the boundary of the Property and the North Railroad Property, as described in a document entitled "Final Construction Report for the North Railroad Property Phase 1 Interim Corrective Measures," dated January 2006;

WHEREAS, FMC has proposed and agreed to take at its sole cost and expense certain early action remedial activities ("EA") that include removal and replacement of soil on the Property, closure and sealing of a portion of the buried Village of Middleport storm sewer referred to as "Culvert 105" that traverses the Property, and installation of a new buried segment of Culvert 105, as well as extension of an existing drainage ditch on the North Railroad Property, which drainage ditch is adjacent to the Property, and installation of a new inlet section of Culvert 105, as described in a document entitled "Revised Scope of Work, 2007 Early Actions for Wooded Parcel & Culvert 105 South of Sleeper Street, FMC Corporation, Middleport, New York," dated March 2007, and any subsequent revisions thereof ("2007 Revised Scope of Work"), a copy of which 2007 Revised Scope of Work is attached hereto as Exhibit A. FMC anticipates that the work described in the 2007 Revised Scope of Work will be incorporated into a Work Plan that will be submitted to and

approved by USEPA and NYSDEC. A copy of this Work Plan will be provided to Grantor;

WHEREAS, the work that FMC proposes to undertake on the Property will include removal of surface debris remaining from previous structures and operations on the Property, including but not limited to the remnants of a burned-down building, but does not include removal of any below grade foundations of such structures;

WHEREAS, the EA proposed to be undertaken with respect to the Property include restrictions on future use of the Property, which restrictions will be documented in an environmental easement ("Environmental Easement") under the NYECL;

WHEREAS, USEPA and NYSDEC have determined and directed that these EA should be performed;

WHEREAS, USEPA and NYSDEC have approved or are anticipated to approve the 2007 Revised Scope of Work; and

WHEREAS, Grantor is willing to have FMC enter onto the Property for the purpose of performing the work described in the 2007 Revised Scope of Work.

AGREEMENTS:

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor and Grantee hereby agree as follows:

1. Grant of Easement. Grantor hereby grants to Grantee, its successors and assigns, for the benefit of Grantee, and for the benefit of its subsidiaries,

successors, assigns, and their respective contractors, sub-contractors, consultants, employees and representatives (collectively "Benefited Parties"), and to representatives of the USEPA, NYSDEC and/or the New York State Department of Health ("NYSDOH"), access to and an easement and right-of-way over, under and above the Property for the purposes of carrying out the 2007 Revised Scope of Work and overseeing that work.

2. Scope of Work. Notwithstanding the language of Section 1 of this Agreement, the rights granted under this Agreement to the Grantee and the Benefited Parties include the right to enter onto the Property for purposes of removal of surface debris and remnants of buildings, removal and replacement of soil, regrading work on the Property to enhance surface water drainage, possible installation of lawn drains and/or catch basins to facilitate surface water drainage, extension of an existing drainage ditch adjacent to the Property and installation of a new inlet to Culvert 105, removal of the existing Culvert 105 inlet structure, installation of a buried pipe section of Culvert 105, and the long-term inspection and maintenance of the work performed, with the exception of the existing and new buried Culvert 105 pipe. Further, the rights granted under this Agreement to the Grantee and the Benefited Parties include the right to do any and all things which in the judgment of FMC, reasonably exercised, are necessary to accomplish the purposes to be served by the work described in the 2007 Revised Scope of Work and are otherwise necessary to permit FMC to comply with and manage risks arising from all applicable legal authority.

3. Easement of Necessity. Grantor hereby further grants to the Grantee and the Benefited Parties the exclusive right, privilege, authority and easement of ingress, egress and access as are necessary to the rights granted to and the obligations imposed upon the Grantee under this Agreement.

4. Term of Easement. This Agreement, and all rights and obligations of Grantor and Grantee contained in it, shall terminate after the USEPA, NYSDEC, and/or any other governmental agency or authority having jurisdiction over the EA being performed on the Property under the terms of the AOC, or any other lawful authority, have agreed that corrective action is no longer necessary or has been completed; provided, however, that Grantor agrees to continuing access for the purposes of inspection and any operation and maintenance ("O&M") activities with respect to the work performed on the Property, including but not limited to any inspection and O&M required under an Environmental Easement and the Site Management Plan established pursuant to an Environmental Easement, until such time as USEPA, NYSDEC, and/or any other governmental agency or authority referenced above determines that such inspection and O&M are no longer required.

5. Grantee's Duty to Restore. Grantee shall repair and restore such portions of the Property as may have been altered by the Grantee in performing work pursuant to this Agreement and the 2007 Revised Scope of Work to the condition that existed prior to performance of the work or to the condition otherwise described in the 2007 Revised Scope of Work. Grantee shall effect such restoration within a

reasonable time after completing the EA work, but in no event shall the Grantee be required to effect such restoration until, in the judgment of Grantee, reasonably exercised, doing so will not interfere with the purpose for which the EA work was performed.

6. Restricted Use; Environmental Easement. Grantor understands and agrees that the work performed with respect to the Property under the 2007 Revised Scope of Work will result in restrictions with respect to future use of the Property, including a possible prohibition on future residential development and use, procedures on certain excavation activities, and maintenance of structures such as surface cover. Grantor agrees to cooperate with Grantee in the imposition of such restrictions and to execute an Environmental Easement substantially in the form of the model Environmental Easement attached to this Access Agreement as Exhibit B, if and as required, to implement such restrictions. FMC shall bear the costs of preparing and filing the required Environmental Easement.

7. Indemnity. Grantee hereby agrees to indemnify Grantor against, and to hold Grantor harmless from, any and all claims, demands, suits, proceedings, damages, liabilities, cost and expenses, including reasonable attorneys' fees and disbursements, asserted against or incurred by Grantor for damages occurring at the Property resulting from activities undertaken pursuant to this Agreement by Grantee or the Benefited Parties. For purposes of the foregoing indemnity promise: (x) damages shall not include such damage or alteration to the Property itself as may occur pursuant to the exercise of Grantee's rights under this Agreement, unless

Grantee fails to perform its obligations as set forth in Paragraph 5 of this Agreement; and (y) damages shall not include any consequential, incidental or punitive damages or costs of any nature or kind. This indemnity does not include any claims based on actions taken or omissions on the part of the USEPA, NYSDEC, or NYSDOH, or the respective employees, agents, or other representatives of those entities.

8. Limited Release. Grantor hereby agrees to release Grantee and the Benefited Parties from any and all claims, demands, suits, proceedings, liabilities, costs and expenses, for the damages excluded from Grantee's indemnity promise in paragraph 7, subparagraphs (x) and (y) of this Agreement.

9. Savings Clause. Notwithstanding anything to the contrary contained in this Agreement, nothing in this Agreement shall require Grantor or Grantee to take any action, or to refrain from taking any action inconsistent with or in violation of any federal, state or local law, statute, rule, regulation, governmental order, imposed standard of conduct or common law obligation.

10. Agreement Runs With the Land. Grantor and Grantee acknowledge and agree that the rights and obligations set forth in this Agreement shall run with the land, and that the provisions hereof are binding upon, and shall inure to the benefit of Grantor, its successors and assigns, and Grantee and the Benefited Parties and their respective successors and assigns.

11. Applicable Law. This Agreement shall be governed by the law of the State of New York.

12. Integrated Agreement; Assignment. This Agreement constitutes the entire agreement between the parties with respect to the particular subject matter of the Agreement and supersedes all prior negotiations and agreements regarding that subject matter, whether written or oral. This Agreement may not be altered or amended except by an instrument in writing executed by all the parties to this Agreement. This Agreement will not be effective as to successors or other assigns of either party without the prior written consent to assignment by the other party, and any such assignment without such prior written consent shall be void and of no effect with respect to the other party.

13. No Admissions. Nothing contained in this Agreement shall constitute or be construed as an admission by a party hereto regarding any release of hazardous or other substances onto, beneath or from the Property. The parties to the Agreement reserve all claims, rights and defenses concerning this subject.

14. No Interest. FMC shall acquire no interest or estate in land of Property under this Agreement. This Agreement only provides for the right to enter the Property for purposes of conducting the work set forth herein, together with an easement of necessity for the purposes of conducting this work.

15. Successors and/or Assigns. This Agreement is binding upon the successor(s) and assign(s), if any, if assignment occurs consistent with Paragraph 12,

above.

IN WITNESS WHEREOF, GRANTOR AND GRANTEE HAVE EXECUTED THIS AGREEMENT ON THE LAST DATE WRITTEN BELOW.

Grantee:
FMC CORPORATION

By: Robert T. Forbes
Position: Director, Environment
Dated: August 2, 2007.

STATE OF Pennsylvania)
:ss.
COUNTY OF Philadelphia)

On the 2 day of August, in the year 2007, before me, the undersigned, personally appeared Robert T. Forbes, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before the undersigned in the city of Philadelphia, Philadelphia County, Pennsylvania.

Agnes F Shafie
Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
AGNES F. SHAFIE, Notary Public
City of Philadelphia, Phila. County
My Commission Expires April 8, 2010

Grantor:
SALLY K. COE

Sally K. Coe
Dated: 7/31/07

STATE OF ARIZONA)
:ss.
COUNTY OF MARICOPA)

On the 31 day of July, in the year 2007, before me, the undersigned, personally appeared SALLIE K. COE, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before the undersigned in the city of ~~Peoria~~ Glendale, Maricopa County, Arizona.

Notary Public

OFFICIAL SEAL
NANCY J. CHIPMAN
NOTARY PUBLIC - STATE OF ARIZONA
MARICOPA COUNTY
My Comm. Expires Sept. 20, 2008

ARCADIS

Appendix B

Analytical Data for Soil that Remains Following 2007 Early Action Activities

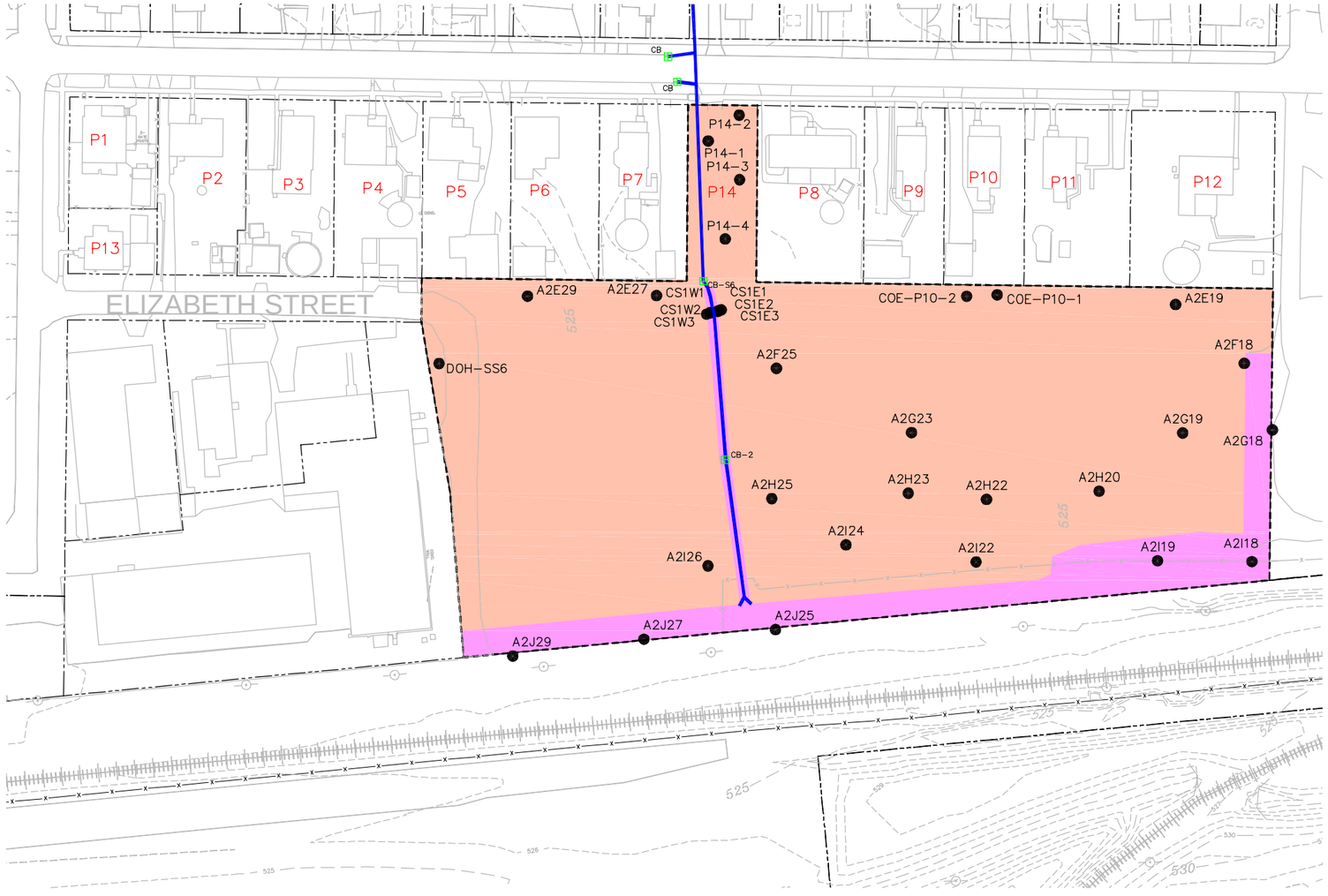
TABLE B-1
NON-ARSENIC RESULTS IN SOIL (CURRENT CONDITIONS)
NORTH COMMERCIAL INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN
RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK

FMC CORPORATION - MIDDLEPORT, NEW YORK

Sample ID:		A2H20	A2I19	SHELBY-CS-GENFILL081308[4]	SHELBY-CS-GENFILL[5]	SHELBY-CS-TOPSOIL[6]	Topsoil_083107[7]
Sample Depth(Inches):		24 - 27	144-180	USED 6-48	USED 6-48	USED 0-6	USED 0-6
Date Collected:		10/04/02	10/04/02	08/13/08	07/02/07	08/13/08	08/31/07
Collected by:	Units	FMC	NYSDEC	FMC	FMC	FMC	FMC
Chlorinated Pesticides							
4,4'-DDD	mg/kg	0.006 JN	--	0.0039 U	0.00076 J	0.004 U	0.041 J
4,4'-DDE	mg/kg	0.092	--	0.0068	0.0024 J	0.0074	0.13 J
4,4'-DDT	mg/kg	0.08	--	0.0025 J	0.0010 J	0.0016 J	0.23 J
Aldrin	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.005	0.0079 U
alpha-BHC	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.002 U	0.0079 U
alpha-Chlordane	mg/kg	0.0037 U	0.17 U	0.002 U	0.0018 U	0.002 U	--
beta-BHC	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.002 U	0.0079 U
delta-BHC	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.002 U	0.0079 U
Dieldrin	mg/kg	0.005 J	--	0.0039 U	0.0035 U	0.004 U	0.0079 U
Endosulfan I	mg/kg	0.0037 U	0.067 U	0.002 U	0.0018 U	0.002 U	0.0079 U
Endosulfan II	mg/kg	0.0071 U	0.067 U	0.0039 U	0.0035 U	0.004 U	0.0079 U
Endosulfan sulfate	mg/kg	0.0071 U	0.067 U	0.0039 U	0.00063 JPG	0.004 U	0.0079 U
Endrin	mg/kg	0.0071 U	0.067 U	0.0039 U	0.0035 U	0.004 U	0.0079 U
Endrin aldehyde	mg/kg	0.0071 U	0.13 U	0.0039 U	0.0035 U	0.004 U	0.0079 U
Endrin ketone	mg/kg	0.0071 U	0.067 U	0.0039 U	0.0035 U	0.004 U	0.0079 U
gamma-BHC (Lindane)	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.002 U	0.0079 U
gamma-Chlordane	mg/kg	0.0037 U	0.17 U	0.002 U	0.0018 U	0.00086 J	--
Heptachlor	mg/kg	0.0037 U	0.034 U	0.002 U	0.0018 U	0.002 U	0.0079 U
Heptachlor epoxide	mg/kg	0.0037 U	0.034 U	0.00031 JPG	0.0018 U	0.002 U	0.0079 U
Isodrin	mg/kg	0.0071 U	--	0.0039 U	0.0035 U	0.004 U	--
Methoxychlor	mg/kg	0.037 U	0.34 U	0.020 U	0.018 U	0.020 U	0.0079 U
Toxaphene	mg/kg	0.37 U	0.67 U	0.20 U	0.18 U	0.20 U	0.079 U
Metals							
Lead	mg/kg	20.4	--	13.0	13.1	17.1	63.0 J
Arsenic - All data provided on Figure B-1.							

Notes:

1. Results in milligram per kilogram (mg/kg), equivalent to parts-per-million (ppm).
2. Data Qualifiers:
   - J - The analyte was positively identified; however, the associated numerical value is an estimated concentration.
   - JN - Indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
   - PG - The percent difference between the results of the quantitation column and confirmation column was >40%.
   - U - Analyte not detected at the associated detection level.
3. Backfill samples (last four columns) also submitted for analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and other metals (see Figure B-1 for arsenic results).
4. "Shelby-CS-GENFILL081308" is clean general fill used from 6 to 24 inches depth only in the area surrounding locations COE-P10-1 and COE-P10-2 (see Figure B-1).
5. "Shelby-CS-GENFILL" is clean general fill used from 6 to 24 inches depth or 6 to 48 inches depth in all other areas.
6. "Shelby-CS-Topsoil" is clean topsoil used from 0 to 6 inches depth only in the area surrounding locations COE-P10-1 and COE-P10-2 (refer to Figure B-1).
7. "Shelby-CS-Topsoil 083107" is clean topsoil used from 0 to 6 inches depth in all other areas.



Boring ID	Arsenic Results (mg/kg) Sample Interval (inches) 0–6	6–12	12–24	24–30	30–36	36–48	Deeper than 48 Inches			
A2E19	CLEAN TOPSOIL (CTS) 10.5	CLEAN BACKFILL (CBF) 3.3		--	--	--	--	--	--	--
A2E27				--	--	--	--	--	--	--
A2E29				--	--	--	--	--	--	--
A2F25				--	--	--	--	--	--	--
A2G19				--	--	--	--	--	--	--
A2G23				--	--	--	--	--	--	--
A2H20				10.5 (24 – 27)	--	--	--	--	--	--
A2H22				--	--	--	--	--	--	--
A2H23				--	--	--	--	--	--	--
A2H25				--	--	--	--	--	--	--
A2I22				--	--	--	--	--	--	--
A2I24				--	--	--	4.2 (51 – 54)	--	--	--
A2I26				--	--	--	11.9 (57 – 60)	--	--	--
P14-1				--	--	--	--	--	--	--
P14-2				--	--	--	--	--	--	--
P14-3				--	--	--	--	--	--	--
P14-4				--	--	--	--	--	--	--
COE-P10-1	CTS 4.0	CBF 2.4		3.8	2.9	--	--	--	--	--
COE-P10-2				4.7	3.8	--	--	--	--	--
DOH-SS6	GRAVEL		CBF 3.3	--	--	--	--	--	--	--
A2F18	CTS 10.5	CBF 3.3					--	--	--	--
A2G18							13.8 (48 – 51)	--	--	--
A2I18							--	--	--	--
A2I19							5.7 (65 – 68)	--	--	--
A2J25							4.6 (59 – 62)	--	--	--
A2J27							--	--	--	--
A2J29							--	--	--	--
CS1E1				65.3	--	--	41.7 (48 – 54)	--	--	--
CS1E2				--	--	--	53.0 (48 – 54)	--	--	--
CS1E3				--	--	--	4.1 (48 – 54)	3.6 (60 – 66)	--	--
CS1W1							CBF 3.3 (48 – 54)	22.9 (60 – 66)	5.9 (66 – 72)	--
CS1W2								21.0 (60 – 66)	79.1 (72 – 78)	--
CS1W3								56.1 (60 – 66)	33.7 (72 – 78)	15.6 (78 – 82)

LEGEND:

- APPROXIMATE BOUNDARY OF WOODED PARCEL
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING BUILDING
- 530 — EXISTING ELEVATION CONTOUR LINE (CONTOUR INTERVAL 1 FOOT)
- SAMPLING LOCATION
- CULVERT 105
- CATCHBASIN
- P12 — PROPERTY ID NUMBER
- APPROXIMATE EXTENT OF 2007 EARLY ACTION:
- 24–INCH REMOVAL DEPTH
- 48–INCH REMOVAL DEPTH

NOTES:

1. BASEMAP OBTAINED FROM A FIGURE BY CONESTOGA–ROVERS AND ASSOCIATES TITLED "HISTORIC ARSENIC SOIL/SEDIMENT DATA – NORTH RAILROAD PROPERTY" DATED OCTOBER 2003 AT A SCALE OF 1"=120'
2. ADDITIONAL MAPPING INFORMATION OBTAINED FROM RECORD DRAWING WP–1 OF 2007 EARLY ACTION CONSTRUCTION REPORT (ARCADIS 2009).
3. ALL LOCATIONS ARE APPROXIMATE.
4. REFER TO 2007 EARLY ACTION CONSTRUCTION REPORT (ARCADIS 2009) FOR DETAILED INFORMATION ON EXTENT OF SOIL REMOVED AND REPLACEMENT WITH CLEAN FILL MATERIALS.

0 50' 100'
GRAPHIC SCALE

FMC CORPORATION - MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA
WOODED PARCEL - SITE MANAGEMENT PLAN

SOIL ARSENIC CONCENTRATIONS AT THE WOODED PARCEL (POST 2007 EARLY ACTION)

ARCADIS

FIGURE
B-1

CITY: SYRACUSE GROUP: ENVCAD DB: P. LISTER LD: P. LISTER PM: D. WRIGHT TR: T. LEEMHUIS LYR:ON=*;OFF=REF; (FR2)
G:\ENVCAD\SYRACUSE\ACT1\B003773600\00014\DWG\377366G05.DWG LAYOUT: B-1 SAVED: 4/22/2009 2:51 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ----
XREFS: 37665X01 37665X02 IMAGES: CATALOG:B003766500\XREF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/22/2009 2:52 PM BY: LISTER, PAUL

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Appendix C

Pre-Inspection Checklist,
Inspection Form, and Stormwater
Sampling Procedure

NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK
FMC CORPORATION – MIDDLEPORT, NEW YORK

PRE-INSPECTION CHECKLIST

Inspector Name:	
Proposed Inspection Date:	

I. Notifications (check when completed and enter date and means of notification)

Note: All notifications must be made by telephone or email at least 3 business days prior to inspection date.

	Person: Date: Telephone # / Email address:
☐ NYSDEC Field Representative	
☐	

Comments:

II. Review Items (check when completed)

- ☐ Site Management Plan
- ☐ Record Drawings
- ☐ Prior Inspection Forms (review minimum of 2 most recent) and most recent report
- ☐ Inspection Protocols

Comments:

III. Inspection Equipment (check when collected)

- ☐ Inspection Form
- ☐ Camera
- ☐ Flashlight
- ☐ Measuring Tape
- ☐ Hammer/Pick
- ☐ Other: (Describe)

NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK
FMC CORPORATION - MIDDLEPORT, NEW YORK

INSPECTION FORM

Inspector Name:	***Weather:***	***Other Parties Present (and affiliation):***
Date/Time:	***Weather Previous Two Days:***	

Instructions: For each site feature, check the box if condition is present and photograph the condition. Provide a detailed description of each noted condition on Page 2. Identify the location(s) of observed conditions on a site plan.

I. Engineered Cover System (Grass Cover)		[ ]	None
[ ]	Dead or dying grass-cover	[ ]	Ponded water
[ ]	Loss or lack of grass-cover	[ ]	Accumulated debris
[ ]	Woody tree saplings	[ ]	Damage (holes, rutting)
[ ]	Erosion (e.g., rills, gullies)	[ ]	Other (describe on Page 2)
II. Engineered Cover System (Gravel Cover) (See Note 1)		[ ]	None
[ ]	Erosion (e.g., rills, gullies)	[ ]	Ponded water
[ ]	Damage (potholes, rutting)	[ ]	Other (describe on Page 2)
III. North Ditch Extension		[ ]	None
[ ]	Erosion (e.g., rills, gullies)	[ ]	Accumulated debris or sediment
[ ]	Displaced stone material	[ ]	Excessive vegetation
[ ]	Sloughing or unstable slopes	[ ]	Ponded water
[ ]	Damage (holes, rutting)	[ ]	Other (describe on Page 2)
IV. Culvert 105 Inlet		[ ]	None
[ ]	Erosion (e.g., rills, gullies)	[ ]	Ponded water
[ ]	Debris or sediment that impedes flow	[ ]	Damage (holes, rutting)
[ ]	Excessive vegetation	[ ]	Other (describe on Page 2)
V. Catch Basin CB-2		[ ]	None
[ ]	Debris or sediment at grating that impedes flow	[ ]	Dislodged or damaged grating
[ ]	Debris or sediment in catch basin that impedes flow	[ ]	Damaged concrete (cracks, spalling)
VI. Catch Basin CB-S6		[ ]	None
[ ]	Debris or sediment at grating that impedes flow	[ ]	Dislodged or damaged grating
[ ]	Debris or sediment in catch basin that impedes flow	[ ]	Damaged concrete (cracks, spalling)
VII. Grass-Lined Swale		[ ]	None
[ ]	Loss or lack of vegetation	[ ]	Ponded water
[ ]	Erosion (e.g., rills, gullies)	[ ]	Debris or sediment that impedes flow
VIII. Chain Link Fence		[ ]	None
[ ]	Damaged or missing sections of fencing	[ ]	Excessive vegetation against fence

Note:

1. The gravel portion of the Engineered Cover System will be replaced with vegetated soil cover once the gravel access area is no longer needed to facilitate remedial activities (see note on Figure 2). If no gravel-covered areas are present at time of inspection, please mark as "N/A".

NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL
SITE MANAGEMENT PLAN RELATIVE TO 2007 EARLY ACTION REMEDIAL WORK
FMC CORPORATION - MIDDLEPORT, NEW YORK

INSPECTION FORM

IX. Detailed Description of Observations

Instructions: Provide additional descriptions of the conditions noted on Page 1 for each site feature. Include recommended actions and mark the location of the observed conditions on site map.

Conditions Observed:

X. Photographic Documentation

Instructions: Describe each photograph taken and mark the location and view direction on site map.

Photo Number	***Inspection Item Number and Location***	***Photo Description***

XI. Stormwater Samples

Inspector Name: **Date/Time of Sampling:**	**Weather:**	**Other Parties Present (and affiliation):**

a. Sample Information

Sample Number	**Location**	**Describe the water sample characteristics**

b. Collection Method Used / Additional Comments:

Appendix C

I. Stormwater Sampling

The procedures to be followed to obtain a stormwater sample from catch basin CB-S6, are outlined below.

A. Equipment/Supplies:

The following materials will be available, as required, during stormwater sampling:

1. Personal protective equipment (PPE) per the Health & Safety Plan (HASP)
2. Surveyor's rod
3. Appropriate water sampling equipment (e.g., peristaltic pump, pump tubing, disposable in-line water filters, and Teflon lined sampling tubing)
4. Appropriate sample containers
5. Transport container with ice
6. Chain of custody form

B. Procedures:

1. Measure the total depth of the water column with the catch basin by extending the surveyor's rod into the water until it reaches the bottom.
2. Attach the sample tubing to the surveyor's rod at 0.5 times the total water column depth and lower rod through the grate cover of the structure to its base.
3. Utilize the peristaltic pump and tubing to transfer water directly into appropriate lab supplied bottles.
4. Field filtered samples will be collected by connecting the disposable filters directly to the effluent tubing of the peristaltic pump.
5. Secure all sample jar caps tightly.
6. Label all sample containers.
7. Place filled sample containers on ice in a cooler.
8. Follow outlined procedures for preservation of samples and packing, handling, and shipping with associated chain-of-custody procedures for samples.
9. Complete the chain-of-custody forms.
10. With NYSDEC Analytical Services Protocol Category B deliverables, request laboratory analyses of the following:
    - total and dissolved arsenic (USEPA SW-846 Method 6010B)
    - total and dissolved lead (USEPA SW-846 Method 6010B)
    - Total Dissolved Solids (SMEWW Method 2540C)
    - Total Suspended Solids (SMEWW Method 2540D)
    - hardness (SMEWW Method 2340C)
    - total and dissolved chlorinated pesticides (4,4'-DDT, 4,4'-DDD, 4,4'-DDE, dieldrin, and BHC isomers) (USEPA SW-846 Method 8081A)

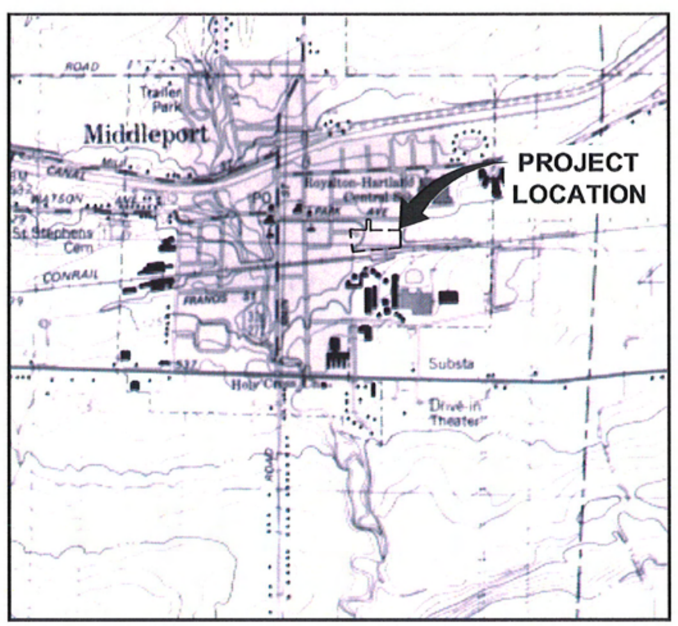
ARCADIS

Appendix D

Copies of Record Drawings for the Wooded Parcel from the 2007 Early Action Construction Report

RECORD DRAWINGS

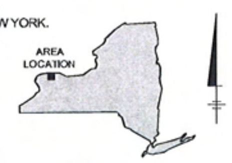
2007 EARLY ACTIONS NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE., MEDINA, NEW YORK.

LOCATION MAP

0 2000' 4000'
GRAPHIC SCALE



DATE ISSUED / DATE REVISED

JANUARY 2009

FMC CORPORATION
MIDDLEPORT, NEW YORK

ARCADIS

ARCADIS OF NEW YORK, INC.

STATE OF NEW YORK
JOSEPH MOLINA III
072644
LICENSED PROFESSIONAL ENGINEER

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
ARCADIS of New York, Inc.
(formerly BLASLAND, BOUCK & LEE, INC.)
DATE 3/19/09 BY Joseph Molina III

IMPORTANT TELEPHONE NUMBERS:

DIG SAFELY NEW YORK
800-962-7962

MIDDLEPORT FIRE COMPANY
716-735-7872

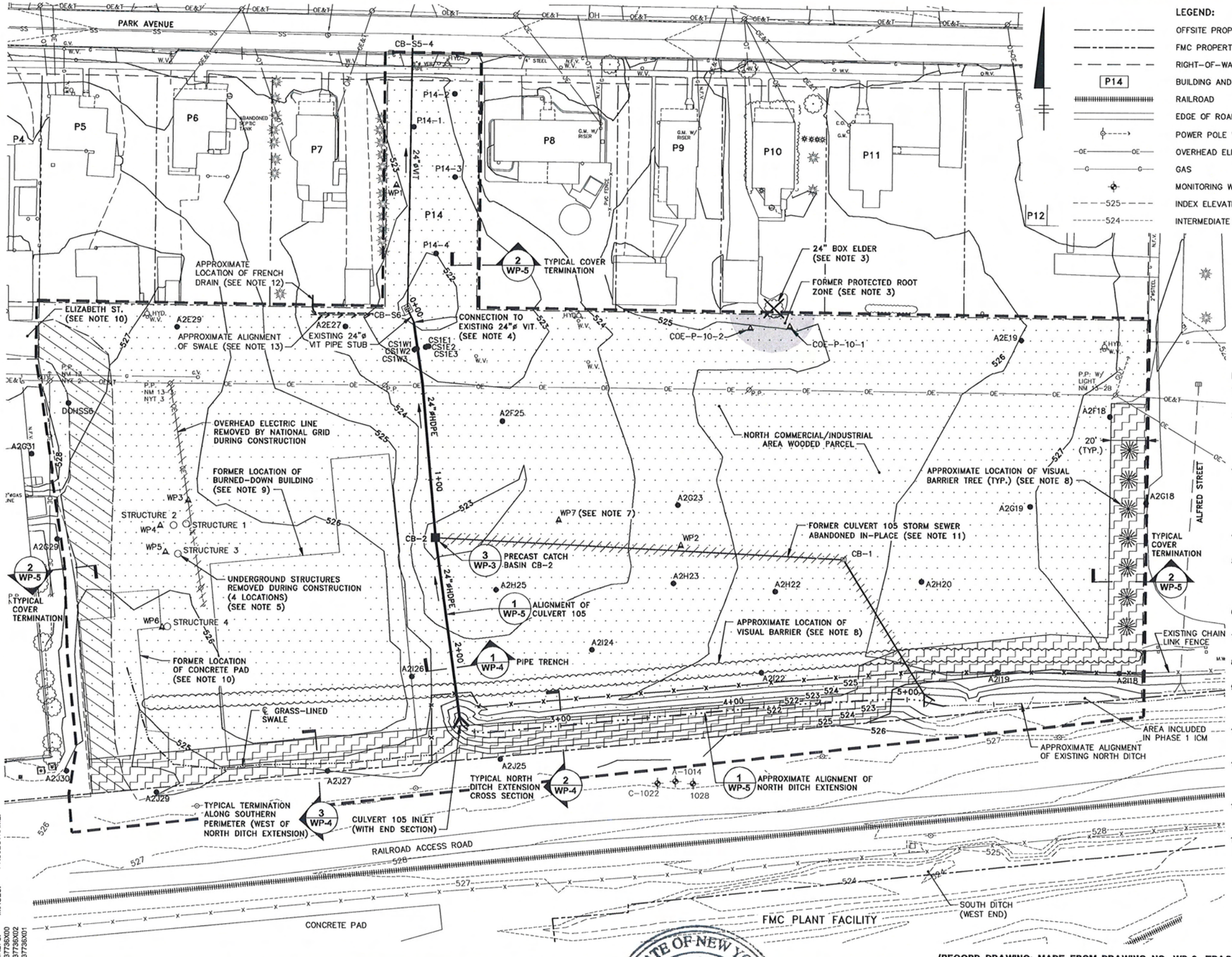
MIDDLEPORT POLICE DEPT.
716-735-3700

MEDINA MEMORIAL HEALTH CARE
716-735-7239

NATIONAL GRID
716-831-7464

IN CASE OF EMERGENCY
911

INDEX TO DRAWINGS



LEGEND:

- OFFSITE PROPERTY BOUNDARY
- FMC PROPERTY BOUNDARY
- RIGHT-OF-WAY BOUNDARY
- P14 — BUILDING AND PROPERTY ID
- RAILROAD
- EDGE OF ROAD
- POWER POLE W/ GUY WIRE
- OE — OVERHEAD ELECTRIC
- G — GAS
- MONITORING WELL
- 525 — INDEX ELEVATION CONTOUR
- 524 — INTERMEDIATE ELEVATION CONTOUR
- CULVERT 105 ALIGNMENT/EXISTING STORM SEWER
- CULVERT 105 ALIGNMENT/NEW STORM SEWER
- CB-S6 — EXISTING CATCH BASIN AND ID
- CB-2 — NEW CATCH BASIN AND ID
- CULVERT 105 FLOW DIRECTION
- HYDRANT
- X / X — DETAIL REFERENCE / DRAWING REFERENCE
- APPROXIMATE LIMIT OF WORK AREA AT THE WOODED PARCEL
- EXISTING CULVERT
- 24-INCH SOIL REMOVAL
- 48-INCH SOIL REMOVAL
- APPROXIMATE LIMIT OF AREA RESTORED WITH GRAVEL COVER (1 / WP-3)
- A2G19 — HISTORIC SOIL SAMPLE LOCATION
- WP1 — 2007 EARLY ACTIONS SAMPLE LOCATION AND ID
- NEW CHAIN LINK FENCE
- 522 — FINAL GRADE CONTOUR
- VISUAL BARRIER TREES (SPRUCE)
- VISUAL BARRIER TREES (ARBORVITAE)

NOTES:

1. BASEMAP INFORMATION OUTSIDE LIMIT OF FIELD SURVEY BASED ON APRIL 16, 2002 AERIAL SURVEY PROVIDED BY ABRAMS AERIAL SURVEY CORPORATION.
2. FIELD SURVEY INFORMATION SHOWN ON THIS DRAWING WAS COMPILED FROM EXISTING CONDITIONS FIELD SURVEYS, DATED OCTOBER 12, 2005 AND MAY 10, 2007, AND A RECORD PLAN, DATED DECEMBER 13, 2007, BY MCINTOSH AND MCINTOSH, P.C. THE HORIZONTAL DATUM IS NORTH AMERICAN DATUM 1983 (NAD83). ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29).
3. A 24-FOOT-RADIUS PROTECTED ROOT ZONE (PRZ) WAS ESTABLISHED AROUND THE 24-INCH-DIAMETER BOX ELDER TO REDUCE THE POTENTIAL FOR DAMAGE DURING THE 2007 CONSTRUCTION ACTIVITIES. IN JANUARY 2008, THE BOX ELDER WAS BLOWN DOWN DURING A WINTER STORM. SUBSEQUENTLY, THE 24-INCH-DEEP SOIL REMOVAL WAS COMPLETED FOR THE PORTION OF THE PRZ LOCATED ON THE WOODED PARCEL DURING THE 2008 CONSTRUCTION ACTIVITIES. SOIL REMOVAL, BACKFILLING, AND RESTORATION ACTIVITIES WERE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2007 EARLY ACTIONS CONSTRUCTION DRAWINGS.
4. CONNECTION OF 24-INCH DIAMETER HDPE PIPE, FROM CATCH BASIN CB-2, TO THE EXISTING 24-INCH DIAMETER VITRIFIED CLAY PIPE (VIT) WAS FORMED WITH NON-SHRINK GROUT.
5. FOUR UNDERGROUND STRUCTURES WERE DISCOVERED DURING EXCAVATION ACTIVITIES. STRUCTURES 1, 2, AND 4 WERE DETERMINED TO BE UNDERGROUND STORAGE TANKS (USTs). STRUCTURE 3 WAS DETERMINED TO BE A CONCRETE PAD ASSOCIATED WITH THE USTs. STRUCTURES 1, 2, AND 4 WERE REMOVED AND DISPOSED OF AT AN APPROPRIATE OFFSITE FACILITY. STRUCTURE 3 WAS REMOVED AND PLACED IN THE ESI FILL AREA AT THE FMC PLANT FACILITY.
6. REFER TO THE PROFILE 1 ON DRAWING WP-5 FOR ADDITIONAL INFORMATION PERTAINING TO THE INSTALLED STORM SEWER PIPING AND MANHOLES.
7. LOCATION OF SOIL SAMPLE POINT WP7 IS APPROXIMATE. ACTUAL LOCATION OF WP7 WAS NOT SURVEYED AT THE TIME OF THE SAMPLING.
8. EVERGREEN TREES WERE PLANTED TO FORM A VISUAL BARRIER. LOCATION OF VISUAL BARRIER IS APPROXIMATE AND IS BASED ON FIELD OBSERVATIONS.
9. SURFACE REMNANTS OF THE BURNED-DOWN BUILDING WERE REMOVED AND DISPOSED OF AT AN APPROPRIATE OFFSITE FACILITY. CONCRETE PAD AND SUBSURFACE MATERIAL (E.G., SECONDARY PAD DISCOVERED DURING EXCAVATION ACTIVITIES) WERE REMOVED AND PLACED IN THE ESI FILL AREA AT THE FMC PLANT FACILITY.
10. CONCRETE PAD AND THE PAVED SECTION OF ELIZABETH STREET THAT EXTENDED INTO THE WOODED PARCEL PROPERTY BOUNDARY WERE REMOVED AND PLACED IN THE ESI FILL AREA AT THE FMC PLANT FACILITY.
11. CULVERT 105 STORM SEWER PIPING FROM THE FORMER INLET LOCATION TO CB-2 AND CATCH BASIN CB-1 WERE COLLAPSED-IN-PLACE, AND ENDS OF THE COLLAPSED PIPING WAS PUMPED FULL OF FLOWABLE FILL. CULVERT 105 PIPING FROM CB-2 TO CB-S6 WAS REMOVED AND REPLACED WITH NEW PIPING.
12. AT THE REQUEST OF THE P7 PROPERTY OWNER, A FRENCH DRAIN WAS INSTALLED AT THE SOUTH END OF THE P7 PROPERTY TO REDUCE THE POTENTIAL FOR PONDING AT THIS LOCATION. THE LOCATION OF THE FRENCH DRAIN IS APPROXIMATE AND IS BASED ON FIELD OBSERVATIONS.
13. BASED ON FIELD OBSERVATIONS, IT APPEARS THAT THE P7 PROPERTY OWNER HAS INSTALLED A SHALLOW SWALE ALONG THE ALIGNMENT OF THE FRENCH DRAIN FOLLOWING COMPLETION OF THE 2008 CONSTRUCTION ACTIVITIES. THE LOCATION OF THIS SWALE IS APPROXIMATE AND IS BASED ON FIELD OBSERVATIONS. THE SWALE IS NOT A COMPONENT OF THE REMEDIAL DESIGN AND WAS NOT REVIEWED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION. THE SWALE IS SHOWN FOR REFERENCE PURPOSES ONLY.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
ARCADIS of New York, Inc.
(formerly BLASLAND, BOUCK & LEE, INC.)
(RECORD DRAWING: MADE FROM DRAWING NO. WP-2, TRACER NO. 3770BG02.DWG, DATED 08/09/07) DATE 3/19/09 BY Joseph Molina III

30' 0 30' 60'
1"=30'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA, III
Professional Engineer's No.: 072644
State: NY | Date Signed: 3/19/09 | Project Mgr: TWY | Designed by: MBH/TAS | Drawn by: AGS | Checked by:

STATE OF NEW YORK · JOSEPH MOLINA III · LICENSED PROFESSIONAL ENGINEER · 072644

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL

SITE PLAN

ARCADIS Project No. B0037736.0000.00018
Date: JANUARY 2009
ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

WP-1

CITY: SYRACUSE DIV/GROUP: 14/ENV DB: AGS LD: AGS PIC: PM: TWY TM: MBH LYRON*:OFF*REF* LAYOUT: WP-1 SAVED: 1/29/2009 1:12 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: — PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 1/29/2009 1:12 PM BY: SAMIOS, ALEX
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- APPROXIMATE LIMIT OF WORK AREA AT WOODED PARCEL
- APPROXIMATE LIMIT OF SOIL COVER (1 / WP-3)
- APPROXIMATE LIMIT OF GRAVEL COVER (1 / WP-3)
- APPROXIMATE LIMIT OF RIPRAP
- SURFACE FLOW DIRECTION
- CHAIN LINK FENCE
- 522 FINAL GRADE CONTOUR
- P14 PROPERTY ID
- VISUAL BARRIER TREES (SPRUCE)
- VISUAL BARRIER TREES (ARBORVITAE)

NOTES:

1. SEE DRAWING WP-1 FOR BASEMAP INFORMATION.
2. ALL DISTURBED AREAS, RESTORED AS LAWN, WERE HYDROSEEDED AND FERTILIZED. FOLLOWING SEEDING AND FERTILIZATION, AREAS ALONG THE NORTHERN AND SOUTHERN BOUNDARIES OF THE WOODED PARCEL (INCLUDING ALL OF THE P14 ACCESS CORRIDOR) WERE COVERED WITH TEMPORARY EROSION CONTROL MAT. TEMPORARY EROSION CONTROL MAT WAS LATER REMOVED IN THE SPRING OF 2008 AS IT WAS NO LONGER NEEDED AND WAS HINDERING MOWING ACTIVITIES.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
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(RECORD DRAWING: MADE FROM DRAWING NO. WP-4, TRACER NO. 37708G07.DWG, DATED 08/09/07) DATE 3/19/09 BY Joseph Molina III

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1" = 30' — 30' 0 30' 60'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name	JOSEPH MOLINA, III	
Professional Engineer's No.	072644	
State: NY	Date Signed: 3/19/09	Project Mgr.: TWY
Designed by: MBH/TAS	Drawn by: AGS	Checked by:

STATE OF NEW YORK · JOSEPH MOLINA III · 072644 · LICENSED PROFESSIONAL ENGINEER

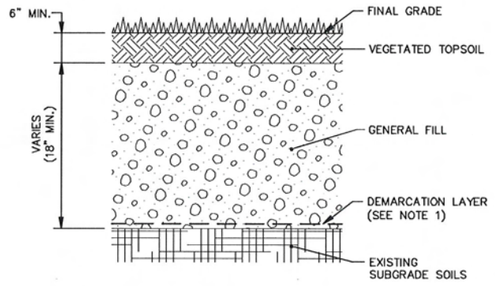
ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL

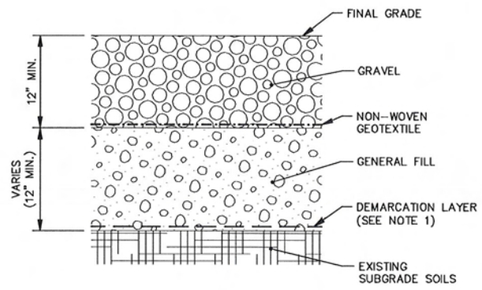
FINAL GRADING PLAN

ARCADIS Project No. B0037736.0000.00018
Date JANUARY 2009
ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

WP-2



SOIL COVER



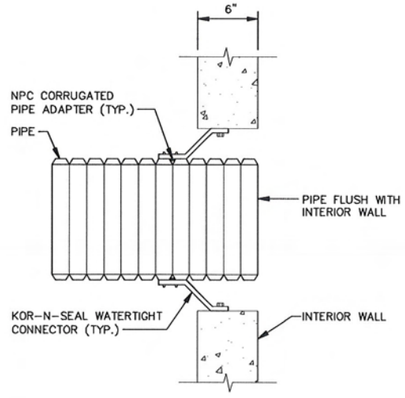
GRAVEL COVER

NOTE:

1. DEMARCATION LAYER MATERIAL IS A BRIGHT ORANGE GEOTEXTILE FABRIC.

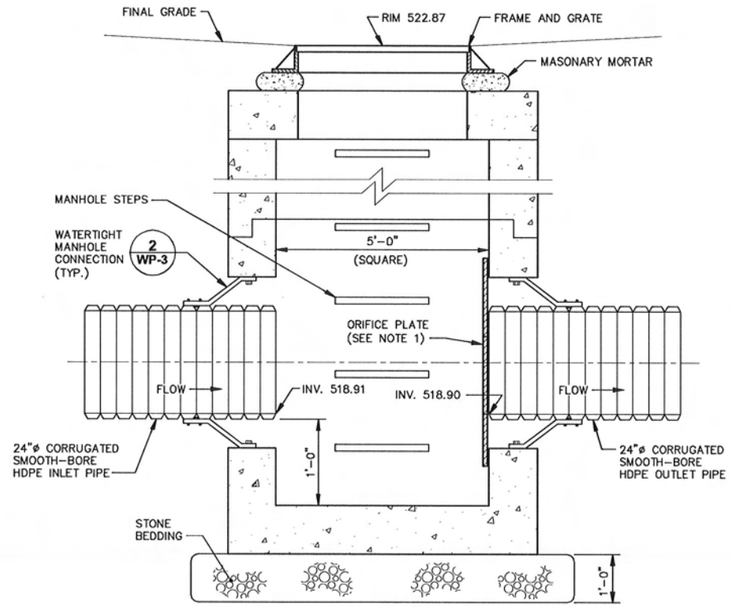
ENGINEERED COVER SYSTEM (1)

NOT TO SCALE



WATERTIGHT MANHOLE CONNECTION (2)

NOT TO SCALE



NOTE:

1. AN ORIFICE PLATE, WITH AN 18-INCH-DIAMETER OPENING, WAS INSTALLED OVER THE OPENING OF THE OUTLET PIPE IN ACCORDANCE WITH FIELD MODIFICATION FORM NO. 04. INVERT ELEVATION OF 18-INCH-DIAMETER OPENING MATCHES INVERT ELEVATION (I.E., 518.90) OF OUTLET PIPE. ORIFICE PLATE WAS HOT DIP GALVANIZED AND ATTACHED TO CATCH BASIN WALL WITH STAINLESS STEEL WEDGE ANCHORS. REFER TO APPENDIX B OF THE 2007 EARLY ACTION FINAL CONSTRUCTION REPORT FOR THE FIELD MODIFICATION/CLARIFICATION FORMS.
2. A WATERPROOF COATING, MANUFACTURED BY MIDLAND ASPHALT, WAS APPLIED TO THE EXTERIOR OF CATCH BASIN CB-2.

PRECAST CATCH BASIN CB-2 (3)

NOT TO SCALE

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ARCADIS of New York, Inc.
(formerly BLASLAND, BOUCK & LEE, INC.)

(RECORD DRAWING: MADE FROM DRAWING NO. WP-5, TRACER NO. 37708G03.DWG, DATED 08/09/07) DATE 3/19/09 BY Joseph Molina III

SCALE (S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA, III
Professional Engineer's No.: 072644
State: NY
Date Signed: 3/19/09
Project Mgr: TWY
Designed by: MBH/TAS
Drawn by: AGS
Checked by:

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL

SECTIONS AND DETAILS

ARCADIS Project No.: B0037736.0000.00018
Date: JANUARY 2009

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

WP-3

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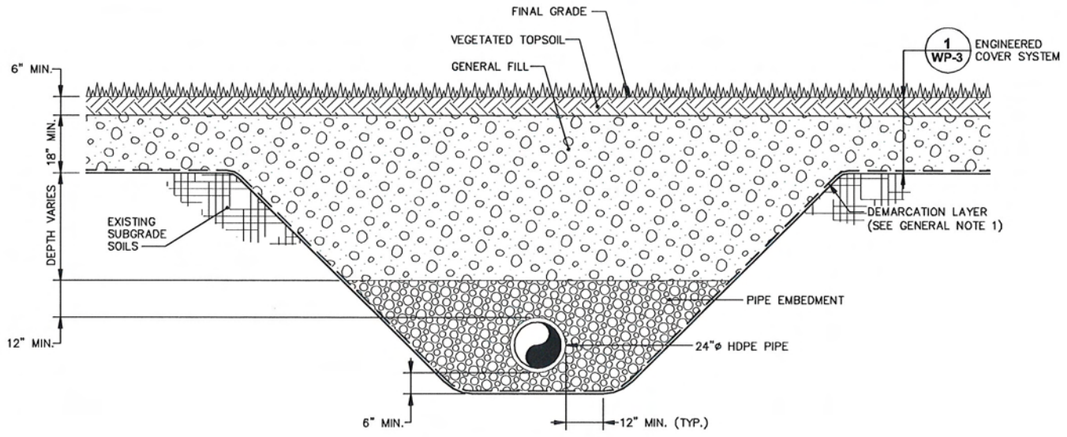
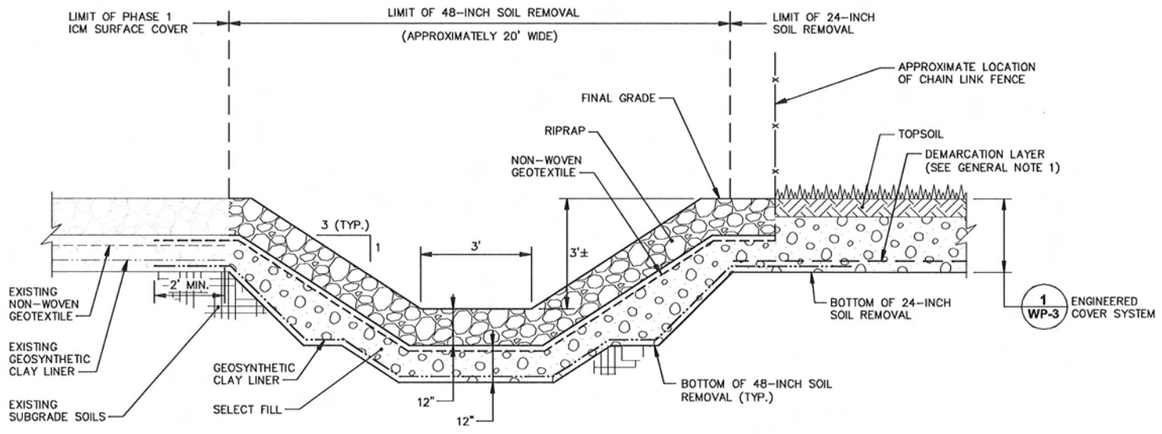
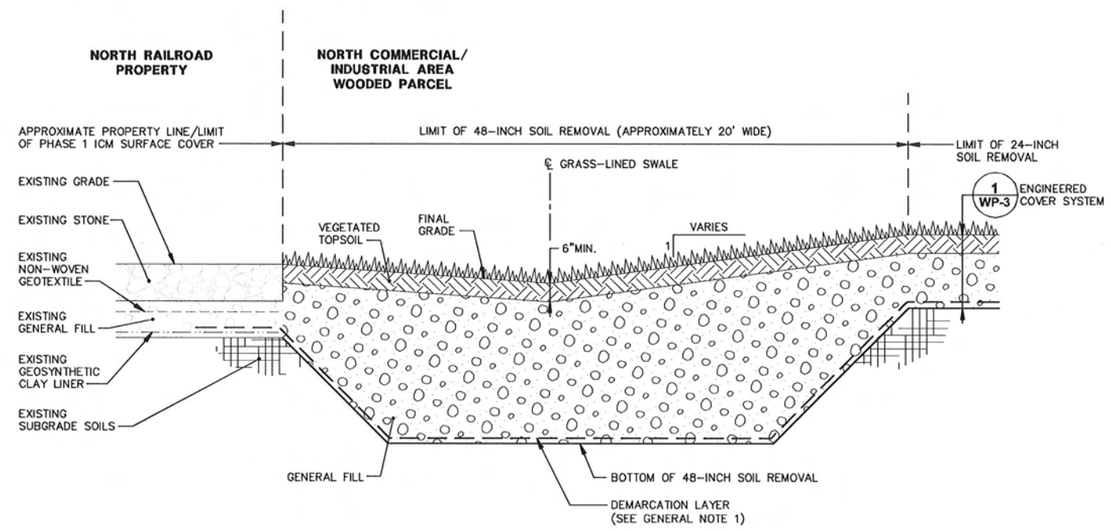


PIPE TRENCH 1
NOT TO SCALE



TYPICAL NORTH DITCH EXTENSION CROSS SECTION 2
NOT TO SCALE



TYPICAL TERMINATION ALONG SOUTHERN PERIMETER (WEST OF THE NORTH DITCH EXTENSION) 3
NOT TO SCALE

GENERAL NOTE:

1. DEMARCATION LAYER MATERIAL IS A BRIGHT ORANGE GEOTEXTILE FABRIC.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
ARCADIS of New York, Inc.
(formerly BLASLAND, BOUCK & LEE, INC.)
(RECORD DRAWING: MADE FROM DRAWING NO. WP-6, TRACER NO. 37708G04.DWG, DATED 07/25/07) DATE 3/19/09 BY Joseph Molina III

SCALE (S) AS INDICATED

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA, III
Professional Engineer's No.: 072644
State: NY | Date Signed: 3/19/09 | Project Mgr.: TWY
Designed by: MBH/TAS | Drawn by: AGS | Checked by:

STATE OF NEW YORK * JOSEPH MOLINA III * 072644 * LICENSED PROFESSIONAL ENGINEER

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL

SECTIONS AND DETAILS

ARCADIS Project No.: B0037736.0000.00018
Date: JANUARY 2009

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

WP-4

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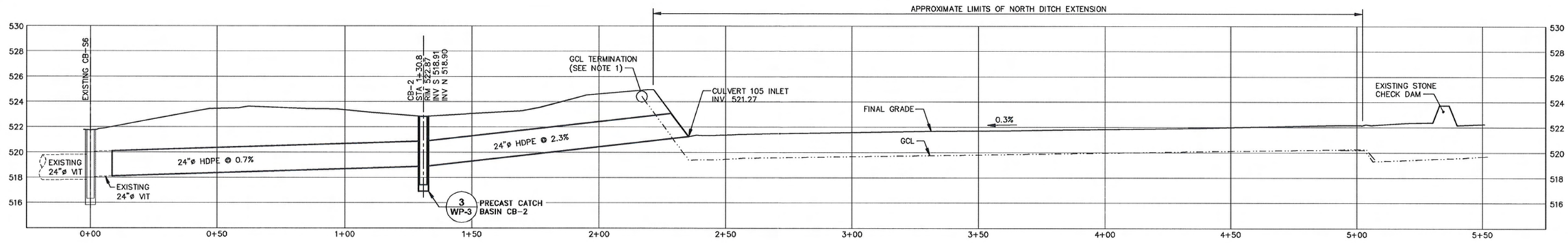
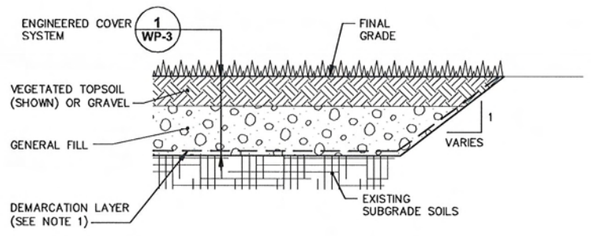


STORM SEWER PROFILE (1)

0 20' 40'
HORIZONTAL SCALE: 1"=20'
0 4' 8'
VERTICAL SCALE: 1"=4'

NOTES:

1. GEOSYNTHETIC CLAY LINER (GCL) WAS TRIMMED OFF APPROXIMATELY 6 INCHES BELOW FINAL GRADE.
2. ALL HDPE PIPING IS ADS/HANCOR N-12.



NOTE:

1. DEMARCATION LAYER MATERIAL IS A BRIGHT ORANGE GEOTEXTILE FABRIC.

TYPICAL COVER SYSTEM TERMINATION (2)

NOT TO SCALE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
ARCADIS of New York, Inc.
(formerly BLASLAND, BOUCK & LEE, INC.)
(RECORD DRAWING: MADE FROM DRAWING NO. WP-7, TRACER NO. 37708G05.DWG, DATED 08/09/07) DATE 3/19/09 BY Joseph Molina III

SCALE (S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA, III
Professional Engineer's No.: 072644
State: NY | Date Signed: 3/19/09 | Project Mgr.: TWY
Designed by: MBH/TAS | Drawn by: AGS | Checked by:

STATE OF NEW YORK JOSEPH MOLINA III 072644 LICENSED PROFESSIONAL ENGINEER

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
NORTH COMMERCIAL/INDUSTRIAL AREA WOODED PARCEL

PROFILES AND DETAILS

ARCADIS Project No.: B0037736.0000.00018
Date: JANUARY 2009
ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

WP-5

CITY: SYRACUSE DIV/GROUP: 141/ENV DB: AGS LD: AGS PIC: PM: TWY TM: MBH LYR:ON=*;OFF=*REF*
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XREFS:
IMAGES:
PROJECTNAME: ---
37736X00

ARCADIS

Appendix E

Early Actions Community Air Monitoring Plan

FMC Corporation

Early Actions Community Air Monitoring Plan

Appendix E to the 2007 Early Actions Work Plan

Revised - July 2007

Revision No. 1 - August 2007

Table of Contents

Attachments

1. Introduction

This plan describes community air monitoring requirements to be performed during implementation of the Early Actions activities associated with the offsite study areas of the Resource Conservation Recovery Act (RCRA) Corrective Action program for the FMC Corporation (FMC) Facility located in Middleport, New York. The air monitoring activities described in this Community Air Monitoring Plan (CAMP) will be conducted to confirm that the community will not be adversely impacted during activities associated with 2007 and subsequent Early Actions activities. This CAMP is a supporting document to the *General Health and Safety Plan* (HASP), which is primarily directed toward protection of workers within the Exclusion Zone and includes worker breathing zone air monitoring requirements.

The CAMP requires real-time monitoring for volatile organic compounds (VOCs) and airborne particulates (i.e., dust) and documentation air sampling and analysis for arsenic during soil handling and ground intrusive activities conducted as part of the Early Actions. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., potential offsite receptors and onsite workers not directly involved with the subject work activities) during remedial work activities associated with the Early Actions. The CAMP establishes action levels for VOCs and airborne particulates that may trigger emission control actions. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or shutdown of work activities if action levels are exceeded. In addition, the air monitoring activities described in this CAMP will help to confirm that airborne contaminants do not migrate offsite as the result of the remedial activities.

2. Scope

The constituent of potential concern associated with the Early Actions is arsenic. The primary constituents of concern are identified in Section 2 of the General HASP. The air monitoring activities described herein will be implemented during all soil handling and ground intrusive activities within the work areas of the Early Actions and the ESI Fill Area located on the FMC plant property. Ground intrusive activities include, but are not limited to, soil excavation, handling, removal, backfilling, grading, and compaction. Real-time air monitoring will be performed for VOCs and airborne particulates. Inorganic arsenic is non-volatile; therefore, airborne emissions related to arsenic would be associated with airborne particulates. Documentation air sampling (and subsequent analysis) for arsenic will also be conducted during soil handling and ground intrusive activities within the Early Actions work areas and the ESI Fill Area.

3. Air Quality Monitoring

3.1 General

Air monitoring during Early Actions work will consist of real-time air quality monitoring for VOCs and airborne particulates and documentation air monitoring for arsenic. If determined to be necessary based on field conditions encountered, the real-time air monitoring and/or the documentation air monitoring may be modified with concurrence of the Agencies' field representative.

This CAMP fulfills the requirements set forth by the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (included as Attachment A to this CAMP). In addition, guidance on fugitive dust suppression and particulate air monitoring requirements are specified in the New York State Department of Environmental Conservation's (NYSDEC's) Technical and Administrative Guidance Memorandum (TAGM) #4031 – Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites, dated October 27, 1989 (included as Attachment B to this CAMP).

A description of the air monitoring activities to be performed during implementation of Early Actions is presented in the following subsections.

3.2 Meteorological Monitoring

Wind direction monitoring will be conducted periodically at an appropriate location using a windsock, wind vane, or other appropriate equipment. Wind direction will be established at the start of each workday and may be reestablished at any time during the workday if a significant shift in wind direction is noted.

3.3 Real-Time Quality Monitoring

3.3.1 VOC Monitoring, Response Levels, and Actions

Air monitoring for VOCs will be performed at two downwind locations at the perimeter of each work area (i.e., the exclusion zone) associated with the Early Actions on a continuous basis (or as otherwise specified) during soil handling and ground intrusive activities. In addition, air monitoring for VOCs will be conducted at one upwind location at the start of each workday and periodically thereafter, as needed, to establish background conditions. If the predominant wind direction shifts radically during the

work day, as determined based on visual observation or other means, then new upwind and downwind monitoring locations will be established. Air monitoring locations will be identified in the property-specific residential safety analysis and discussed with the Agencies prior to commencing soil handling or intrusive activities.

When working in proximity to the following areas, additional air monitoring locations will be established to confirm that these areas are monitored regardless of indicated wind direction:

- At the perimeter of each Early Actions work area between each work area and public streets; and
- At the perimeter of each Early Actions work area between each work area and adjacent occupied property (i.e., residential property).

VOCs will be monitored using a photoionization detector (PID) with an appropriate electrodeless ultraviolet discharge lamp or other equivalent instrument. The monitoring instruments will be calibrated at least daily in accordance with the manufacturer's calibration and quality assurance (QA) requirements. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the action levels specified below.

- If the ambient air concentration of total VOCs at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background (upwind concentrations) for a 15-minute average, work activities will be temporarily halted and monitoring will continue. If the total organic vapor concentration decreases (per instantaneous readings) to a level less than 5 ppm above background, work activities can resume with continuous monitoring.
- If total VOC concentrations at the downwind perimeter of the work area of the exclusion zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of vapors will be identified, corrective actions will be taken to reduce or abate emissions, and air monitoring will be continued. After the abatement steps are taken, work activities may resume provided that the total VOC concentration located 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure (whichever is less, but in no case less than 20 feet) is below 5 ppm over background for the 15-minute average.
- If the VOC level is above 25 ppm at the perimeter of the work area, activities must be shut down and emission control measures must be implemented. Air monitoring must be conducted upon restart to verify that total VOC concentrations at the downwind perimeter of the work area of the exclusion zone are less than 5 ppm above background.

All 15-minute readings must be recorded and be available for the Agencies' field representative(s) to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Odors from equipment operation will be discussed with property owners and will be minimized, to the extent possible, by turning equipment off when not required for project work. Other odors, if any, will be addressed through odor suppression techniques such as covering or wetting areas that emit odors.

3.3.2 Particulate Monitoring, Response Levels, and Actions

Air monitoring for airborne particulates will be performed at two downwind locations and one upwind location at the perimeter of each work area (i.e., the exclusion zone) on a continuous basis (or as otherwise specified) during soil handling and ground intrusive activities. Air monitoring for airborne particulates at the upwind location will be used to establish background conditions. Air monitoring locations will be identified in property-specific scopes of work for excavation/backfilling and discussed with the Agencies prior to commencing soil handling or intrusive activities. Air monitoring and response levels/actions for airborne particulates will be performed in accordance with the NYSDEC's TAGM #4031 (included as Attachment B to this CAMP).

When working on or in proximity to occupied structures, additional air monitoring locations will be established to confirm that these areas are monitored regardless of indicated wind direction:

- At the perimeter of each Early Actions work area between each work area and public streets; and
- At the perimeter of each Early Actions work area between each work area and adjacent occupied property (i.e., residential property).
- Between the perimeter of the work area and the nearest wall of an occupied structure; and
- Between the perimeter of the work area and the nearest structure intake.

Airborne particulates will be monitored using a particulate air monitor equipped with a data logger to measure and record real-time airborne particulate concentrations in milligrams per cubic meter (mg/m^3). The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10

micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action levels. The monitoring equipment will be calibrated at least daily in accordance with the manufacturer's calibration requirements. The equipment must be equipped with an audible alarm to indicate exceedances of the action levels. In addition, fugitive dust migration should be visually assessed during all work activities. The particulate monitoring results will be compared with the action levels presented below.

- If the downwind PM-10 particulate concentration is 100 micrograms per cubic meter (µg/m^3) greater than background (i.e., level at the upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate concentrations do not exceed 150 µg/m^3 greater than background and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m^3 above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are effective in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

- For particulate monitoring between the perimeter of the work area and the nearest wall of an occupied structure, if the PM-10 particulate concentration near the opposite exterior wall(s) of the structure exceeds 150 µg/m^3, work activities will be suspended until additional dust controls (e.g., wetting equipment and excavation areas, spraying water on buckets during excavation and backfilling, restricting vehicle speed and immediately covering or wetting excavation areas and backfill materials placed, dust barriers, temporary enclosures, etc.) are implemented and particulate concentrations are reduced to 150 µg/m^3 or less at the monitoring location.

- For particulate monitoring between the perimeter of the work area and the nearest structure intake, if the PM-10 particulate concentration near the intake vent(s) of the structure exceeds 150 µg/m^3, work activities will be suspended until additional dust controls (e.g., wetting equipment and excavation areas, spraying water on buckets during excavation and backfilling, restricting vehicle speed and immediately covering or wetting excavation areas and backfill materials placed, dust barriers, temporary enclosures, etc.) are implemented and particulate concentrations are reduced to 150 µg/m^3 or less at the monitoring location.

All air monitoring readings must be recorded and made available for the Agencies' field representative(s) to review.

A fugitive dust suppression system will be in place during ground invasive and soil handling activities within the Early Actions area(s) or ESI work areas. General dust suppression techniques include applying water on haul roads, wetting equipment and excavation areas (if any), spraying water on buckets during excavation (if any) and dumping, restricting vehicle speed and immediately covering or wetting excavation areas (if any) and materials placed in the ESI Fill Area upon completion. In addition, the use of engineering controls (e.g., dust barriers, temporary enclosures, etc.) may also be considered to prevent dust migration and potential exposures related to dust.

3.4 Documentation Air Sampling and Analysis

Documentation air monitoring for arsenic will be conducted during soil handling activities and ground intrusive activities within the separate Early Actions work areas and/or the ESI Fill Area. Documentation air monitoring for airborne particulates will be performed at two downwind locations at the perimeter of each work area (i.e., the exclusion zone) and at one upwind location (periodically to establish background conditions) at each separate Early Actions work areas and/or the ESI Fill Area. Air monitoring locations will be identified in the property-specific residential safety analysis and discussed with the Agencies prior to commencing soil handling or intrusive activities.

When working in proximity to the following areas, additional documentation air monitoring locations will be established to confirm that these areas are monitored regardless of indicated wind direction:

- At the perimeter of each Early Actions work area between each work area and public streets; and
- At the perimeter of each Early Actions work area between each work area and adjacent occupied property (i.e, residential property).

Prior to commencing soil handling and ground intrusive activities, documentation air sampling and analysis will be conducted to establish background values for arsenic at the above-referenced upstream locations. During soil handling and ground intrusive activities, documentation air sampling and analysis will initially be performed daily during the first week of excavation and weekly thereafter (or more frequently depending on the sampling results for the first week of sampling). These air samples will be collected and analyzed for arsenic using National Institute of Occupational

Safety and Health (NIOSH) Method 7900 and analyzed by a NYSDOH ELAP-approved analytical laboratory.

The analytical results for the documentation air samples will be maintained in the project file. Copies of the analytical results for the documentation air samples will be provided to the Agencies' field representative and will be included in the final construction report for each Early Actions activity and/or as otherwise requested by the Agencies.

3.5 Project-Specific Residential Safety Analysis

The HSO and FMC's representative will be responsible for performing a property-specific residential safety analysis for each residential property prior to commencement of Early Actions construction activities on a residential property and in consultation with the Agencies' field representative. The property-specific residential safety analysis will:

- Provide health and safety information related to the construction activities to be performed on and/or adjacent residential property, including a plan to notify the residential property owner/occupants of the remedial work schedule;

- Identify necessary work tasks, potential safety hazards, and critical actions to address potential hazards on each property;

- Identify potential air intakes (e.g., open windows, doors, vents) for the house and any precautions that may be required to minimize exposure of the occupants of the house(s) to any construction-related dusts and/or any fumes from the construction equipment;

- Present procedures for any occupants to exit and/or enter the affected house(s) while construction activities are occurring on and adjacent to the residential property; and

- Proposed air monitoring and documentation air sampling locations, as required and described in the CAMP.

In consultation with the Agencies' field representative, the property-specific residential safety analysis will be reviewed with the affected property owner/occupants prior to commencement of construction activities. A general

handout of recommended safety precautions and contact list will be provided to the affected property owner/residents.

A copy of the property-specific residential safety analysis work sheet to be completed at each residential property prior to commencement of Early Actions construction activities is provided in Attachment B to the HASP.

ARCADIS BBL

Attachment A

NYSDOH Generic Community Air Monitoring Plan

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

Attachment B

NYSDEC TAGM #4031

New York State Department of Environmental Conservation

*** Proceed to Guidance Document | Contact the Division of Environmental Remediation ***

This document is a facsimile of an original Technical and Administrative Guidance Memorandum (TAGM) issued by the New York State Department of Environmental Conservation, Division of Environmental Remediation (formerly the Division of Hazardous Waste Remediation). This facsimile was reformatted for the Internet but maintains as much as possible of the original document. Changes were made to headers, footnote locations, paging, etc. to facilitate Internet delivery. Unless otherwise noted, none of these changes revise the content of the original TAGM.

This document was developed to provide Department staff with guidance on how to ensure compliance with statutory and regulatory requirements, including case law interpretations, and to provide consistent treatment of similar situations. This document may also be used by the public to gain technical guidance and insight regarding how the department staff may analyze an issue and factors in their consideration of particular facts and circumstances. This guidance document is not a fixed rule under the State Administrative Procedure Act section 102(2)(a)(i). Furthermore, nothing set forth herein prevents staff from varying from this guidance as the specific facts and circumstances may dictate, provided staff's actions comply with applicable statutory and regulatory requirements. This document does not create any enforceable rights for the benefit of any party.

Many procedures used by the Division of Environmental Remediation are undergoing revision as a result of our continual efforts to improve program implementation. In many cases, previously issued guidance documents are no longer completely consistent with current practice, but are provided here in their original form until final revisions are issued. Users of the posted guidance documents are urged to contact the Division of Environmental Remediation.

TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM #4031

FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

TO: Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs

FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation

SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM -- FUGITIVE DUST SUPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

DATE: Oct 27, 1989

Michael J. O'Toole, Jr. (signed)

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40°C
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation

shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in

unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

FIELD MODIFICATION/CLARIFICATION FORM
2007 EARLY ACTIONS

FIELD FORM NO.: 11 DATE: August 25, 2008
OWNER: FMC Corporation
CONTRACTOR: ENTACT Services, LLC
ENGINEER: ARCADIS of New York, Inc.
CONTRACT: 2007 Early Actions (to be performed in 2008)

CONTRACTOR is hereby directed to proceed with the following:

DESCRIPTION:

- Air monitoring for VOCs, as described in Section 3.3.1 of the Early Actions Community Air Monitoring Plan (CAMP), will not be required during remediation of the P11, P12 properties, and P10 former Protected Root Zone with the formerly Wooded Parcel. To conduct air monitoring for VOCs, a photoionization detector (PID) will be available in the event that odors and/or unidentified materials are encountered during remediation activities at P11, P12 properties and P10 former Protected Root Zone within the formerly Wooded Parcel.

- Properties P-11 and P-12 will be treated as one contiguous work area for purposes of determining locations of air monitoring equipment.

- Property-specific Residential Safety Analyses will not be required for the P11, P12 properties, and P10 former Protected Root Zone within the formerly Wooded Parcel. Instead, particulate air (dust) monitoring described in the Early Actions CAMP Sections 3.3.2 and 3.4 will be conducted, and will include the following locations: upwind and downwind of the work area, between work areas and public streets, and between work areas and adjacent occupied structures.

- For the Early Actions work areas, where requirements would result in duplicate air monitoring stations, the air monitoring stations may be combined into a single station to serve both monitoring purposes.

REASON FOR CHANGE:

- VOCs are not a contaminant of concern at the subject Early Actions remediation areas.

- Properties P11 and P12 are immediately adjacent to each other and are not currently occupied. As such monitoring at the combined perimeter of these properties will satisfy the community air monitoring needs.

- Properties P11 and P12 are not currently occupied and the P10 former Protected Root Zone is part of the Coe Property (aka formerly Wooded Parcel), which is not an occupied property; perimeter monitoring will address downwind areas, public streets and adjacent occupied properties.

- Combining proximate monitoring stations eliminates redundancy and is consistent the approach previously acceptable to the Agencies during the 2007 Early Actions.

FIELD MODIFICATION/CLARIFICATION FORM
2007 EARLY ACTIONS

ATTACHMENTS:

- None

NOTE: THIS IS AUTHORIZATION TO PROCEED WITH THE DESCRIBED CHANGES/CLARIFICATIONS. ANY ADJUSTMENT TO CONTRACT PRICE OR TIMES SHALL BE APPROVED BY FMC PRIOR TO IMPLEMENTATION.

Joseph Molina III — Date: 8/25/08
ENGINEER (Authorized Signature)

CONTRACTOR (Authorized Signature) — Date: 8/25/08

OWNER (Authorized Signature) — Date: 8/27/08

Mark Molyneaux (see below) — Date: 8/28/08
NYSDEC (Authorized Signature)

NYSDEC approval is conditioned upon NYSDEC granting access to FMC with regard to Property P12.