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Transmitted Via Overnight Delivery

September 28, 2016

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Mr. Nathan Freeman
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Re: FMC Corporation, Middleport, NY
EPA ID No. NYD002126845
AOC Docket No. II-RCRA-90-3008(h)-0209
DER Site No. 932014
Amended Part 373 Permit Application

Dear Ms. Gardell and Mr. Freeman:

FMC Corporation (FMC) submitted an Amended Part 373 Permit Application for its Middleport facility to the New York State Department of Environmental Conservation (NYSDEC) by letter dated May 18, 2015. That submittal included a draft *North Site Cover Operations and Maintenance Plan* (Parsons, May 2015) and a draft *Groundwater Extraction System Operation and Maintenance Manual* (Parsons, May 2015). The NYSDEC provided comments on those plans by emails dated July 15, 2016 and July 19, 2016. FMC and the NYSDEC discussed the NYSDEC's comments during a conference call held on August 17, 2016 and it was agreed that FMC would revise the documents based on the NYSDEC's comments and the August 17th discussion by September 30, 2016. Accordingly, the following revised documents associated with the Amended Part 373 Permit Application are enclosed (on CD only):

- Attachment D - North Site Cover Operations, Monitoring and Maintenance Plan, and the
- Attachment E – Groundwater Extraction System Operations and Maintenance Manual

If you have questions or would like additional information, please contact me directly by telephone at (215) 299-6554 or by email at shawn.tollin@fmc.com.

Sincerely,

Shawn J. Tollin
Manager, Environmental Remediation

Enclosures

cc: S. Dewes, NYSDEC
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NORTH SITE COVER OPERATIONS, MONITORING AND MAINTENANCE PLAN

FMC MIDDLEPORT SITE
EPA ID NO. NYD002126845

Prepared for:

FMC Corporation

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September 2016

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ACRONYMS

Acronym	Definition / Description
Agencies	NYSDEC and USEPA (when referred to collectively)
EHS	Environmental Health and Safety
ESI	Eastern Surface Impoundment
Facility	Middleport, New York, FMC Facility
FMC	FMC Corporation
HOA	Hand/Off/Auto
ICM	Interim corrective measure
NSC	North Site Cover (Area)
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
OM&M	Operations, Monitoring and Maintenance Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SCADA	Supervisory Control And Data Acquisition
SPDES	State Pollution Discharge Elimination System
USEPA	United States Environmental Protection Agency
WSI	Western Surface Impoundment
WTP	Water Treatment Plant

1.0 INTRODUCTION

1.1 General

FMC Corporation (FMC) has prepared this Operations, Monitoring and Maintenance (OM&M) Plan for the North Site Cover (NSC) and associated groundwater and/or surface water collection sumps and underdrains, and the ESI Fill Area Cover at its facility in Middleport, New York (Facility or Site). Figure 1 shows the location of the Site and Figure 2 presents the layout of the Site. This plan supersedes previous O&M plans for the NSC issued in July 1989 (CRA[1] 1989) and in March 1997 (CRA 1997) and incorporates changes to the NSC and/or associated O&M programs made since development of those older plans.

The intended scope of this Plan is to identify the process and procedures to maintain the integrity of the NSC, underdrain/sump collection systems, and the ESI Fill Area Cover to ensure that these systems remain an effective means to minimize infiltration, isolate the surface runoff from the contaminated subsurface soils and groundwater, prevent direct contact with contaminated subsurface soil and groundwater, and prevent off-site migration of contaminated soil.

This document includes background information, maintenance requirements, inspection forms and guidelines, and descriptions of specific maintenance and monitoring tasks.

1.2 Background

FMC constructed an engineered low-permeability surficial cover on the northern portion of the Site in 1987-1988, as summarized in the final approved *RCRA Facility Investigation Report, Volume 1, Background and Related Information* (Arcadis 2009). The approximate limit of the NSC is depicted in Figure 2. In 2013, FMC modified certain areas of the NSC, as recommended in the *North Site Cover Evaluation Final Report* (Arcadis 2012a). These modifications included the completion of the Building 65/71 Underdrain System, Sump 6 Surface Water By-Pass Modifications, and Stormwater Attenuation Structure modifications. The details of these modifications are included in the 2013 North Site Cover Modifications Construction Report (Arcadis 2013).

Currently, the NSC consists of a composite clay/sand/topsoil cover (2-feet minimum thickness), asphaltic concrete (3 to 5 inches in thickness), and/or synthetic liner/cover (i.e., polyurea liner) over asphalt. As part of the NSC, a series of shallow drains and sumps were modified or constructed to prevent or reduce the level of Site-related contaminants in the surface runoff over the NSC. Surface water runoff from the NSC is collected in the Western Surface Impoundment (WSI) as a non-hazardous wastewater prior to treatment at the Site Water Treatment Plant (WTP) and discharge in accordance with the terms and conditions of the Facility's SPDES Permit. Groundwater and surface water from the underdrains/sumps are collected and treated at the WTP.

Since construction, the NSC and associated drain/sump systems have been inspected, maintained, and/or operated in accordance with O&M plans completed in 1989 and 1997.

The Eastern Surface Impoundment (ESI) was taken out of service in 1988 and has been used for placement of approximately 100,000 cubic yards of soils excavated as part of ICMs performed under the terms and conditions of an Administrative Order on Consent

[1] CRA – Conestoga-Rovers & Associates

(AOC), Docket No. II RCRA 90-3008(h)-0209, which was entered into on July 2, 1991, by FMC, the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) (collectively referred to as the Agencies). Figure 2 shows the approximate limits of the ESI Fill Area. Soil placed in the ESI Fill Area was covered with a nominal 6-inch thick layer of clean fill soils and seeded. This interim grassy cover was last inspected, evaluated as part of the NSC study (Arcadis 2012a) and will be inspected and maintained as part of the NSC O&M activities.

The NSC, underdrain/sump systems, and the ESI Fill Area Interim Cover have been components of interim corrective measures (ICMs) to address subsurface soil and groundwater contamination performed under the terms and conditions of the AOC.

1.3 Plan Organization

In addition to this introduction, the O&M Plan is presented in the following five sections:

- Section 2 – Facility Description
- Section 3 – Inspection Program
- Section 4 – Maintenance Program
- Section 5 – Cover Excavation and Repair
- Section 6 – References

2.0 FACILITY DESCRIPTION

2.1 General

FMC owns and operates a pesticide formulation facility on approximately 102 acres of land located in the southeast corner of the Village of Middleport and in the Town of Royalton, Niagara County, New York (Figure 1). The Facility is bounded by residential properties to the west, agricultural lands to the east, an automobile junkyard to the southeast, a commercial business to the southwest, and a state highway (Route 31) to the south. Properties to the north include a farm field, the Roy-Hart High School and Middle School, the southern right-of-way for Alfred Street, a vacant commercial property, and other commercial/industrial properties.

The Facility is divided into two areas based on surface water drainage patterns.

- The southern part of the Facility comprises approximately 39 acres. Storm water from this area is directed into a series of swales and buried culverts and combines with the effluent from the onsite water treatment Plant (WTP) for discharge in accordance with the Facility State Pollution Discharge Elimination System (SPDES) Permit.
- The northern part of the Facility comprises approximately 63 acres where current formulation, and historic pesticide manufacturing/formulation activities, occurred. This area is primarily covered with the footprint of buildings/structures, paved roadway, parking areas, and the engineered NSC. The NSC occupies approximately 47 acres of the Facility and includes different cover systems, 1) asphalt lined swales and paved areas, 2) a 24-inch-thick clay soil cover system, or 3) polyurea liner/cover over asphalt. The ESI Fill Area occupies the northeastern portion of the Facility and is approximately 7.5 acres. The ESI Fill Area has an interim cover consisting of a 6-inch thick grassy soil cover.

  Surface water runoff from the northern part of the Facility is directed primarily to asphalt-lined or grass-covered swales that drain to the Western Surface Impoundment (WSI). Some surface water is also directed to collection sumps that pump to the Facility groundwater storage tanks. The approximate limits of the NSC Area are shown in the Site Plan (Figure 2). The limits of the typical surface covers are shown in Figure 3.

2.2 Cover System

Currently, Site ICM cover systems consist of the following elements:

- Asphalt cover
- Clay soil cover
- Polyurea liner/cover over asphalt
- ESI Fill Area interim soil cover
- Sumps and collection systems
- Stormwater attenuation areas

Asphalt Cover

The asphalt cover component of the Facility can be subdivided into three major areas: railroad spur lines; roadways/flat areas; and drainage swales and ditches. Flat areas and drainage swales/ditches constructed as part of the NSC cover typically consist of three inches of hot-mix asphalt (two-inches of NYSDOT[2] Type 3 binder covered by one-inch of NYSDOT Type 7 top course) overlying a two-inch-thick layer of crushed stone. A one-inch overlay of asphalt was placed over the existing roads. The inside of the track on the spur lines was sealed with an asphalt/rubber crack sealant. Figure 3 identifies the approximate area with the asphalt areas of the NSC.

Clay Soil Cover

The clay soil cover system for the site consists of a 12-inch-thick, compacted clay layer covered by a six-inch- thick sand drainage layer and a six-inch-thick topsoil layer. The topsoil is seeded with turf grasses or a wildflower mix depending on the area use and surface slope. The clay cover has an established vegetative/grass cover with no bare dirt exposed except during construction and maintenance activities. Figure 3 identifies the approximate area with the clay soil cover areas of the NSC.

Polyurea Liner/Cover

As part of the 2013 NSC modification projects involving the Building 65/71 Underdrain System and Sump 6 Surface Water By-Pass Modifications, a polyurea liner was installed in the asphalt drainage swale south of Buildings 65 and 71 and the paved area (former spur line) between Buildings 23 and 71 (extending north to Sump 6) (Arcadis 2013). Figure 3 identifies the approximate area with the polyurea liner/cover.

ESI Fill Area Interim Soil Cover

The ESI Fill Area interim cover consists of a nominal 6-inch thick grassy soil cover. The approximate area of the ESI cover is shown in Figures 2 and 3.

Sumps and Collection Systems

The NSC includes a series of shallow underdrains designed to depress the local groundwater table, which otherwise could cause shallow groundwater to daylight into the surface water drainage system. Some of these underdrains were installed to reduce potential exfiltration of overburden groundwater to the asphalt-lined swales. Other sumps, that are not associated with underdrains, collect runoff water from building roofs and/or from surface trench drains.

A total of 16 sumps are located throughout the NSC Area. Collected water is pumped to the groundwater storage tanks (T-8100, T-1101/1102) for treatment through the WTP. Figure 4 shows the locations of the 16 sumps (blue) and associated underdrains (pink lines). Each sump is summarized in Table 1. A complete description of the characteristics of each sump is included in Appendix A.

Stormwater Attenuation Areas

Stormwater attenuation structures have been installed within certain areas of the swales.

[2] NYSDOT – New York State Department of Transportation

In 2008, a stormwater attenuation structure was installed in the grass-lined swale located west of the ESI Fill Area to attenuate runoff from upgradient areas to the WSI. This 2008 attenuation structure temporarily backs up water in the grassy NSC lined swale upstream of the structure during rainfall events. As part of the 2013 NSC modification project, FMC modified this attenuation structure by installing a new inlet to further constrict flow.

The 2013 NSC modification project also included installation of another storm water attenuation structure in the asphalt-lined swale at the north central area of the Site. This 2013 attenuation structure installation included the addition of a asphalt berm along the swale and adjustments to existing gate valves at culvert pipes within the main northern asphalt swale.

The 2013 North Site Cover Modifications Construction Report (Arcadis 2013) describes the attenuation structures and includes as-built drawings for these structures (also in Appendix B herein). The locations of these structures are shown in on Figure 2.

3.0 INSPECTION PROGRAM

3.1 Introduction

Regular inspections of the NSC and the ESI Fill Area Cover will be performed in conjunction with maintenance activities. Inspections are completed to review operating condition and confirm that the cover systems and the surface water and underdrain groundwater collection and conveyance system function as intended.

For inspection and record keeping purposes, the NSC and ESI cover areas have been divided into three areas (Areas 1, 2, 3) and a number of sub-areas. The location of these areas is depicted in Figure 5.

Inspection checklists for each of the cover inspection sub-areas are provided in Appendix C and checklists for the sump and collection system inspections are provided in Appendix D. These checklists are to be completed in accordance with the inspection schedule (Table 2). Copies of the completed inspection checklists will be submitted to the Facility Environmental Health and Safety (EHS) Manager and to the FMC remediation project manager or their delegate. Copies of the inspection checklists will also be maintained in the WTP.

Clay/Soil Cover Inspection

A visual inspection of the clay soil cover and the ESI Fill Area interim soil cover will be completed monthly. During this inspection, the inspector will be looking for signs that there is damage to any of the visible components of the cover. Minor issues (burrows, vegetation growth) identified will be addressed at the time of the inspection. Other issues will be managed as described in Section 3.2 below. The completion of the monthly inspections will be documented in the WTP logbook.

Documented inspections of the soil cover will be completed semi-annually (Appendix C consists of the inspection forms). Inspections should be completed in the spring (May), when the groundwater levels are at their highest, and in the fall (October) prior to the first snow fall or when there is no snow cover.

During the soil cover inspection, the inspector will complete a walking, visual inspection, to identify items that may compromise the integrity of the cover. Detailed attention should be paid to slopes, water channels, grass/asphalt transitions and other areas where deterioration is most likely to occur. Typical items that may be identified during the routine inspections of the soil cover include:

- Erosion of soils from surface water runoff
- Areas of exposed soil where vegetation has been removed
- Areas of prolonged surface water accumulation and ponding
- Dead or dying vegetation
- Weeds or growth of woody vegetation with root systems which may breach the cover system
- Animal holes/burrows into the liner system
- Areas with an excessive or continuing buildup of sediments in drainage swales

The inspection of Area 3A will include the eastern stormwater attenuation structure constructed in the grassy clay soil line swale (see Appendix B for descriptions and as-built drawings). The inspection will confirm that the structure is in good condition and that the piping is clear of any impediments to flow.

Inspection Area 3B includes the ESI Fill Area. During the inspection of the grassy soil cover of Area 3B, the ESI Fill Area interim soil cover will be inspected for the presence of any areas of significant erosion of the grassy soil cover, the presence of ponded water, areas of exposed soil where vegetation has been removed, and the growth of woody vegetation.

Asphalt and Polyurea Cover Inspection

A visual inspection of the asphalt and polyurea covers will be completed monthly. During this inspection, the inspector will be looking for signs that there is damage to any of the visible components of the cover. Minor issues (potholes, sinkholes, vegetation growth) identified will be addressed at the time of the inspection. The completion of this monthly inspection will be documented in the WTP logbook. Other issues will be managed as described in Section 3.2 below.

Documented inspections of the asphalt and polyurea covers will be completed semi-annually. Inspections should be completed in the spring (May) when the groundwater levels are at their highest and in the fall (October) prior to the first snow fall or when there is no snow cover. This timing will help to identify the presence of any seeps to the swales.

During the asphalt cover inspection, the inspector will complete a walking, visual inspection to identify items that may compromise the integrity of the cover. Detailed attention should be paid to slopes, water channels, grass/asphalt transitions and other areas where deterioration is most likely to occur. Typical items that may be identified during the routine inspections of the asphalt cover system include:

- Broken, loose or cracked asphalt
- sealant failures around the railroad tracks
- Surface course wear/raveling of asphalt
- Vegetation growing through asphalt
- Evidence of seeps (upward or downward) through the asphalt
- Ponding or accumulation of water
- Formation of potholes or evidence of erosion under the asphalt

The inspector will also complete a visual inspection of the cover components that were installed as part of the 2013 modifications. This includes the polyurea surface liner that was installed to the south of Building 71 and between Buildings 23 and 71 (Figure 3).

In addition to the asphalt and polyurea cover, inspection of Area 1A will include the stormwater attenuation structure installed in the asphalt lined swale at the central part of the Facility. This inspection will confirm that the structure (i.e., asphalt berm and gates) remain in good condition, and that the swale gates are opened at an appropriate height

to slow water flow and are clear of any impediments to flow. Descriptions and as-built drawings of the structure are included in Appendix B.

Sumps and Collection System Inspection

The surface water and groundwater sump and underdrain collection system includes 16 collection sumps, pumps, controls, flow-meters and heat trace (Figure 4). A description of the collection sumps and a summary of their significant characteristics is included as Table 1.

Documented inspections of the sumps and collection system will be completed, at a minimum, on a quarterly basis. Flow meter readings for the swale underdrain collection pumps (sumps S-2, 3, 4, 5, 15, 16) will be recorded weekly by WTP operations staff and recorded in the WTP log. These flow readings will be reported in the Quarterly Progress Reports. A regular check of the flows will be made to ensure the continued operation of the system.

The inspection of the collection sumps will include the following items:

- Visually inspect sumps for accumulated sediment and/or debris
- Confirm that the flow meter is registering flow (when a flow meter is present)
- Test the Hand/Off/Auto (HOA) controls and float controls Inspect all exposed force main fittings and valves for leaks and smooth operation
- Check for heat trace alarms on control panel
- Inspect electrical systems including breakers and wiring for damage
- Perform interlock and radio communication checks with the Supervisory Control And Data Acquisition (SCADA) system
- Confirm that the pump is operational
- Compare current to past flow meter readings for sumps S-2, 3, 4, 5, 15, and 16 to confirm the pump is operating
- Complete an electrical check on the heat trace wiring to confirm heating capacity (October)

Sump Inspections will be documented on the Sump Inspection forms. Copies of the form are included in Appendix D.

3.2 Schedule and Reporting

Inspections described in Section 3.1 will be completed in accordance with the Schedule provided in Table 2.

Any system component deficiency identified during the inspection will be noted on the inspection form and brought to the attention of the Facility EHS Manager or his/her designate. Weekly sump flow meter readings will be reported in the quarterly progress reports to the Agencies.

Copies of the completed inspection checklists will be submitted to the Facility EHS Manager and to the FMC remediation project manager or their delegate. Copies of the inspection checklists will also be maintained in the WTP.

4.0 MAINTENANCE PROGRAM

The maintenance requirements for the NSC include routine maintenance items to maintain the cover systems and the surface water/groundwater sump and underdrain collection systems and recommendations for periodic preventative maintenance. Specific maintenance requirements are identified for each of the inspection areas detailed in the prior sections.

All cover stem component repairs will be documented in the WTP log books and summarized in the quarterly progress reports.

4.1 General Site Maintenance

Security

The Site is bordered by a chain link fence. This fence will be maintained to restrict access to the property from un-authorized persons. Documented inspections of the fence line will be completed on a monthly basis, and recorded on the inspection form included in Appendix E. If any damage is noted, the Facility EHS Manager will be notified so that repairs can be made.

Access Roads

Access roads within the North Site Cover areas will be maintained throughout the year to provide vehicular access to all areas of the Site. The road surfaces consist of paved and unpaved areas. In the winter months, the roads will be plowed and sanded/salted, as necessary. Road surfaces within the cap area will be periodical inspected and maintained. Any rutted or damaged surfaces on roads within the NSC area will be repaired either using an asphalt patch material, or with the addition of crushed granular stone, as appropriate, to match the existing road surface.

4.2 Soil Cover System

Maintenance items for the soil cover system include the following:

Mowing

Specific areas of the NSC Area will be mowed on a regular basis between May and October. Areas to be mowed are show on Figure 6. Mowing is required to remove any woody vegetation that could affect the integrity of the cover system and to facilitate the identification of eroded areas and animal burrows.

Removal of Woody Vegetation

Woody vegetation will not be allowed to grow in the cover area. Any woody vegetation (greater than 2-inch-diameter) will be removed from all of the cover areas.

Repair of Burrows/Holes/Eroded Areas

Any animal burrows, holes or eroded areas will be repaired within seven days of being identified, unless delayed by weather/ground conditions. Burrows and small areas will be filled to a depth of 6-inches with bentonite pellets, topped off with topsoil and seeded with a contractors grass mix.

If larger scale repairs (such as for larger eroded areas) are required, FMC will temporarily repair the holes, if practicable, and initiate engineering, planning, and/or procurement of additional materials within seven days of identifying the hole(s).

Permanent maintenance or repairs will not be performed if frozen soil, snow cover, or muddy conditions exist such that the surface of the North Site Cover could be damaged as a result of gaining access to implement the repair/maintenance activity.

Additionally, after an area is repaired, the location will be inspected again within seven days to confirm that additional damage has not occurred. Repairs will be made in accordance with the requirements identified in the North Site Cover Excavation and Repair Procedures (Appendix F).

4.3 Asphalt Cover System

Maintenance items for the asphalt cover system include the following:

Weed Control in Swales

Excessive vegetation will not be allowed to grow in the asphalt cover system and will be removed/controlled annually, at a minimum. If a herbicide spray is used to kill the vegetation, one will be selected that does not contain compounds included on the RFI Volume 1 Site-Specific Parameter List (Arcadis 2011). Any herbicide used must be approved by the Facility EHS Manager or his/her designee. Removal of vegetation in the swales should be completed prior to the fall semi-annual inspection.

Cleaning of Swales

Surface water swales should be cleaned on an annual basis. This will include the removal of accumulated sediments, debris and vegetation. Cleaning of the swales should be completed prior to the fall semi-annual inspection. Debris removed from the swales will be managed as directed by the Facility EHS Manager.

Swale Flow Control Gates Maintenance

There are five functioning flow-control gates in the surface water swales. Maintenance of the gates will be completed on a semi-annual basis and will include lubrication and testing to make sure that their mechanisms operate freely. The gates will be lubricated with heavy duty marine grade grease. The gates will be repaired, as needed, to ensure smooth operation.

Asphalt Sealing

When asphalt surfaces begin to crack, moisture and air pass into the underlying pavement structure and accelerate the process of oxidation and degradation of the pavement. Additionally, freeze-thaw cycles will accelerate cracking and degradation.

Sealing out moisture and air will prolong the life of the asphalt surface while minimizing infiltration of surface water through the cover. Slurry sealants and crack sealants are the two main sealing techniques used for maintenance of the asphalt cover.

A slurry seal is a homogenous mixture of emulsified asphalt, water, well-graded fine aggregate and mineral filler that has a creamy fluid-like appearance when applied. Slurry seals are used to fill existing pavement surface defects as either a preparatory treatment for other maintenance treatments or as a wearing course.

Pourable crack filler is a modified asphalt emulsion crack filler and sealer used for repairing larger cracks in pavements.

The means and methods of preparation and repair of the asphalt cover will be determined based on the size and extent of the repairs to be made.

Polyurea Liner/Cover System

The polyurea liner areas will be inspected for damage and repaired when damage is noted. Repairs will be made using the 2-part epoxy recommended by the manufacturer.

The liner will be maintained and repaired in accordance with manufacture recommendations (Appendix G).

4.4 Sumps and Underdrain Groundwater Collection System

Maintenance items for the sumps and underdrain groundwater collection system are described below.

Sump and Underdrain Cleaning

The sumps will be cleaned of accumulated sediment identified during an inspection from the underdrain collection sumps (S-2, 3, 4, 5, 15, 16) or in the surface water collection sumps (S-6, 7, 8, 9, 10, 11, 12, 13), as required. Additionally, if the pumping volumes or water level in the sump is low, but groundwater is observed to be daylighting into the surface swale, the underdrain piping associated with the specific sump will be cleaned.

It may be possible to clean out shallow sumps with equipment available at the Facility; however, in the majority of cases, an outside contractor will need to be engaged. Sumps are cleaned out using a vacuum truck, and the underdrains will need to be cleaned using a vacuum truck and a jetting tool.

Any debris and sediments recovered from the sumps will be containerized, dewatered (as necessary), sampled for waste characterization and disposed of at an appropriate off-site disposal facility consistent with the waste characterization results. Water generated during the cleaning will be transferred directly into the groundwater collection system and will not be discharged to the swales and WSI.

Pump and Maintenance

Each collection sump utilizes a submersible pump on a float system to pump collected water through a force main to the groundwater collection tanks. A listing of the pump specifications and the other control and metering equipment for the sumps in included in this plan as Appendix A.

Periodically, the pumps and controls must be tested to confirm that they are working in accordance with the manufacturer's specifications. Critical parts for the pumps and control systems will be maintained at the WTP. A list of the critical parts to be purchased and maintained is included in Appendix H.

Force Main Maintenance

The force main piping from the sump pumps to the groundwater collection system typically is a combination of polyvinyl chloride, steel, and high-density polyethylene piping. A number of the sump force mains are tied into the groundwater recovery system piping. The piping from the sumps to the groundwater collection system may

periodically need to be cleaned using a high-pressure jetting system. The need for cleaning of these lines will be based on a review of the flow rates, where metering exists.

Heat Trace and Insulation

Each of the sections of the force main piping is protected from freezing by a heat trace system and protective piping insulation. Most of the piping is located outside and above ground. Sections of the sump force mains (S-8, S-9, and S-16) go through FMC buildings. Access to the sections within the buildings must be approved through the Facility EHS Manager.

The force main piping insulation and heat trace must be inspected annually. Inspection and testing of the heat trace has been included on the schedule (Table 2) for October of each year.

Alarm and Interlock Testing

The operation and control of the groundwater collection sump equipment is managed through the WTP SCADA system. Included in the SCADA programming are a series of alarms and interlock functions. On an annual basis, these functions will be tested to confirm that they are operating according to the SCADA programming. A summary of the alarms and interlock functions to be verified is included in Appendix I.

5.0 COVER EXCAVATION AND REPAIR

Periodically, excavations may be required in the NSC Area. These may be required to repair subsurface utilities or to complete repairs to the NSC cover systems. Excavation of the cover(s) will only be permitted for essential maintenance tasks.

Procedures have been developed to minimize the potential to impact surface water runoff as a result of excavation or disturbance of the potentially contaminated native soils situated beneath the grass or asphalt covers.

All subsurface work will adhere to stringent work and safety protocols to ensure the safety of the workers and maintain the integrity of the cover and quality of the surface water in the NSC Area. Detailed procedures for excavation throughout the NSC are provided in Appendix F.

The Community Air Monitoring Plan (CAMP) will be implemented whenever soils are disturbed below a grass or asphalt cover. The CAMP is included in the Health and Safety Plan (Parsons 2016).

6.0 REFERENCES

Arcadis, 2009. RCRA Facility Investigation (RFI) Report Volume I, FMC Corporation, Middleport, New York Facility. Arcadis of New York. September 2009.

Arcadis, 2011. Operation, Maintenance and Monitoring Plan for the North Rail Road Property Phase 1 Interim Corrective Measure, Revision 1, Arcadis of New York, Inc. June 2011.

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Arcadis, 2014. 2013 North Site Cover Modifications Construction Report. Arcadis of New York. June 2014.

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