Moog Inc. – Building 11

ERIE COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 915164

Prepared for:
Moog Inc.
300 Jamison Road, East Aurora, NY 14052

Prepared by:
Christopher Russin
400 Jamison Road, East Aurora, NY 14052
716-805-2110

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

MAY 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at Moog Building 11 (hereinafter referred to as the "Site") and is listed on the Registry of Inactive Hazardous Waste Sites (State Superfund) as a Class 3 site administered by New York State Department of Environmental Conservation (NYSDEC). Reclassification to a class 4 is pending DEC acceptance of remedial activities. A voluntary clean-up agreement was never formally agreed to with the NYSDEC, but Moog voluntarily started site clean-up of its own accord in October 1996 and was given a Site # 915164.

1.1.1 General

Moog Inc. entered into a verbal voluntary agreement with the NYSDEC to remediate a 1.26 acre property located in East Aurora, Erie County, New York. This agreement required the Remedial Party, Moog Inc., to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this 1.26-acre site is provided in Figure 1 – Figure of Site and Site Boundaries. The boundaries of the site are more fully described in the metes and bounds site description that is found in Appendix 1.

After completion of the remedial work described in the April 1995 Remedial Action Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as 'remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Deed Restriction is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the

site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Moog Inc. in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Deed Restriction for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. A Deed Restriction (Appendix 2) granted to the NYSDEC, and recorded with the Erie County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Deed restriction for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Deed Restriction and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a

Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Deed Restriction. Failure to properly implement the SMP is a violation of the Deed Restriction, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the VCA Site #915164 for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Deed Restriction for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located in the Town of Elma, County of Erie, New York and is identified as Block and Lot numbers 155.00-1-8.2, 155-00-1-5.111 and 155.00-1-5.112 on the Town of Elma Tax Map. These parcels are zoned industrial. The site is an approximately 1.26-acre area bounded by the Moog Parking lot and Jamison Road to the north, a Moog building addition (known as Building 11D) to the south, the Building 11

western driveway to the east, and the majority of Building 11 to the west (see Figure 1). The boundaries of the site are more fully described in Appendix 1 – Metes and Bounds.

1.2.2 Site History

The property was farmland until Moog acquired it in the 1956. Building 11 was then later developed on the vacant land. The Building 11 contamination resulted from overfilling an underground storage tank prior to 1990. The discovery of the contamination was made in May 1994. The waste tank stored used oil, coolant and Freon 113. This waste oil tank was replaced with a double-walled tank in the same location, with visibly contaminated soil excavated at the same time. A Work Plan for the Building 11 remediation was developed in October 1994. A groundwater pump-and-treat system with collection trench was installed and began operation on 01-11-1996. There are also 8 monitoring wells located near Building 11 to document the location, spread and concentration of the contamination. These wells have been monitored at least annually since 1996.

Other than the tank replacement no structures have been removed at the site. Moog stopped using chlorinated solvents for parts cleaning and replaced this process with aqueous cleaning and mineral spirits in the 1997-2001 timeframe. Based on fluid level monitoring results and cathodic protection test records, the replacement tank has experienced no leaks or other issues since its installation and remains in use as of April 2014. The tank registration for the Plant 11 tank is attached as Appendix 6.

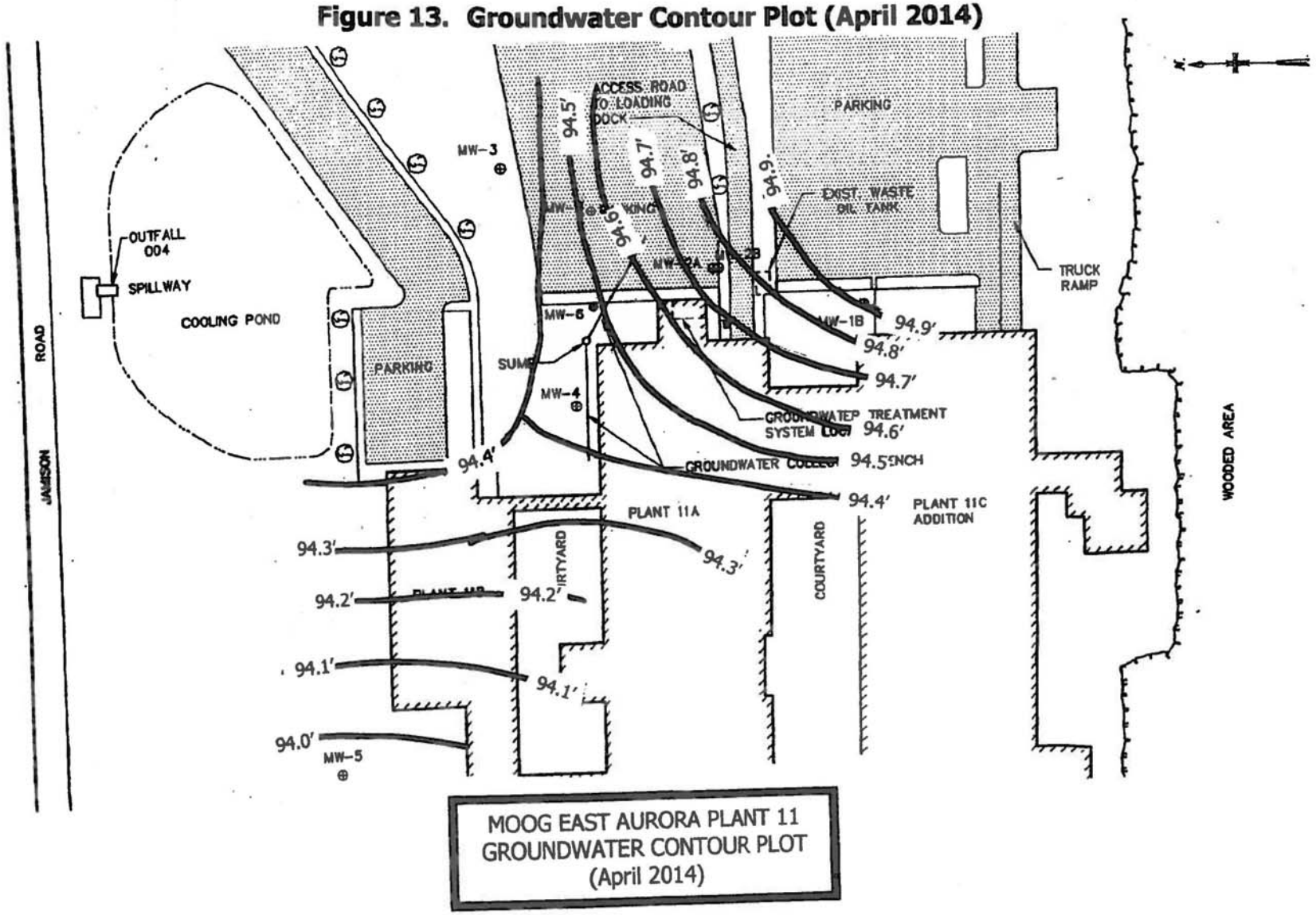
The dates and names of historical reports are found below:

- Summary of Hydrogeological Site Conditions – July 1994
- Remedial Evaluation – October 1994
- Remedial Action Plan - April 1995
- Groundwater Remediation System Performance Monitoring Plan – March 1997
- Phase 1 (entire campus) – March 2008

1.2.3 Geologic Conditions

Based on measurements in on-site monitoring wells installed during this assessment, ground-water flow is generally to the north-northwest across the site. The ground-surface topography, location of nearby surface water bodies, and regional drainage systems, suggest that the basin-wide ground-water flow direction is to the northwest toward Cazenovia Creek and, to a lesser extent, north toward Buffalo Creek. The regional ground-water flow is to the northwest, toward Lake Erie. Ground water levels are approximately 4 to 6 feet below grade, depending on location. A groundwater flow figure is shown in Figure 13 below.

Figure 13. Groundwater Contour Plot (April 2014)



MOOG EAST AURORA PLANT 11
GROUNDWATER CONTOUR PLOT
(April 2014)

The site is located within the Lake Erie Lowland physiographic region, with topography that is dominated by glacial lacustrine and moraine complexes. The surficial deposits near the site are till and lacustrine beach deposits (Cadwell, 1988). Field observations suggest that till deposits dominate the surficial deposits at the site. Lacustrine sand and gravel deposits were not observed during drilling activities. Soil boring logs from investigations completed during this assessment are available in the 1994 Summary of Hydrogeological Conditions.

Soils at the site consist of Darien silt loam, with 0 to 3 percent slopes. The Darien silt loam is deep and poorly drained. It developed in shaley till deposits and generally stretches across central Erie County in an east-west band. The soil is described in the Erie County Soil Survey (USDA, 1986) as:

" ... this soil has a surface layer of dark grayish brown silt loam 10 inches thick. The subsurface layer is mottled, grayish brown silt loam 3 inches thick. The subsoil is 21 inches thick. It is mottled, olive brown silty clay loam in the upper part and mottled, dark grayish brown silty clay loam in the lower part. The substratum to a depth of 60 inches or more is firm, dark grayish brown shaley silty clay loam."

The bedrock underlying the till deposits encountered at the site consists of Angola and Rhinestreet Shales of the Upper Devonian West Falls Groups (Rickard and Fisher, 1970).

Weathered shale was encountered at approximately four to eight feet below grade during drilling activities at the site. A geologic section is shown in Figure 2 on page 46.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following reports:

July 1994 - Summary of Hydrogeological Site Conditions

October 1994 - Work Plan for Plant 11 Remedial Evaluation

April 1995 – Remedial Action Plan

Generally, the RI determined that all contaminated soil above soil clean-up standards had been removed during the replacement of the UST in 1990. The only remaining media impacted is groundwater contamination from the residual soil contamination and direct contact with the contamination in the time period between the spill and its discovery.

Below is a summary of site conditions when the RI was performed in 1994:

Soil

- The RI did not discover any soil with contamination above soil clean-up standards.

Site-Related Groundwater

The groundwater contamination at the site was confirmed to be from the pre-1990 UST during the October 1994 Work Plan. It was proposed at that time that a groundwater pump and treat system (with air stripper) would further remediate the contaminated groundwater. This system was installed in October 1996.

The maximum groundwater contaminant concentrations prior to the pump-and-treat system installation are presented in table 1 below. Cleanup limits for these contaminants found in 6 NYCRR Part 703 is also shown.

Table 1 – Maximum Groundwater Contaminant Concentrations

Parameter	Maximum Conc. (ug/L or ppb)(1)	6 NYCRR Part 703 Limit (ug/L or ppb)
1,1-Dichloroethene	42	5
1,1-Dichloroethane	4300	5
cis-1,2-Dichloroethene	2000	5
1,1,1-Trichloroethane	6000	5
Trichloroethene	3500	5
Tetrachloroethene	3400	5
Trichlorotrifluoroethane (Freon 113)	4200	5

(1) Maximum contaminant conc. observed in MW-2 and MC-2 between May 1994 and January 1996.

Moog has sampled the treatment system influent and effluent monthly, MW-5 quarterly and MW-1B, MW-2A, MW-2B, MW-3, MW-4, MW-6, and MW-7 annually. Since the

pump-and-treat system was installed in 1996, Moog has not conducted any remediation other than the groundwater remediation provided by the system.

On April 25, 2012 a reclassification letter was sent to the NYSDEC seeking to reclassify the site from a class 03 to a class 04. Reclassification is necessary if the site is ever to be considered remediated and removed from the hazardous waste sites registry. In accordance with a conference call and discussion on the reclassification petition with David Szymanski and Martin Doster of the NYSDEC (Region 9) on December 19, 2012, it was agreed to shut off the pump and treat system to determine if natural attenuation would be more effective than the pump and treat system. The pump and treat system was shut off in February 2013. Quarterly well monitoring was then instituted to determine if natural attenuation is a viable course of action.

Site-Related Soil Vapor Intrusion

The NYSDEC contacted Moog via letter on October 30, 2007 asking Moog to conduct a soil vapor intrusion study in Plant 11 due to the presence of organics in the groundwater underlying the building. A meeting between the NYSDEC and Moog was held in December 2007 and a Field Sampling Plan for soil gas monitoring was drafted in February 2008. The sampling occurred in May 2008 with the sampling report submitted to the NYSDEC in July 2008.

Table 2 below from the July 2008 Sampling Report shows the sub slab soil gas air concentrations resulting from the contamination from the UST. Although none of the levels required action (monitoring only) according to the October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH), Moog elected to install a sub slab depressurization system anyway. The system was installed in June 2009 and has been operating without incident since its installation.

Table 2 – Soil Vapor Intrusion Results

Soil Vapor Intrusion Results
Moog Building 11
East Aurora, NY

Parameter	Sample ID Numbers			
	SSA	SSA (Duplicate)	SSB	SSC
1,1,1-Trichloroethane	68	65	610	420
1,1,2-Trichloro-1,2,2-trifluoroethane	650	640	120	59
1,1-Dichloroethane	2.2 J	2.2 J	2.0 J	0.56 J
1,1-Dichloroethene	5.2 U	5.4 U	6.7 U	5.5 U
1,2-Dichloroethene (cis)	5.2 U	5.4 U	6.7 U	5.5 U
1,2-Dichloroethene (trans)	5.2 U	5.4 U	6.7 U	5.5 U
Tetrachloroethene	33	33	140	71
Trichloroethene	18	18	29	4.6
Vinyl chloride	3.4 U	3.5 U	4.3 U	3.5 U

All results reported in UG/M3
U - Not detected above the reported quantitation limit
J - The reported concentration is an estimated value

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved Remedial Action Plan, dated April 1995 and Groundwater Remediation System Performance Monitoring Plan dated March 1997.

The following is a summary of the Remedial Actions performed at the site:

1. No soil was encountered exceeding Soil Clean-up Objectives (SCOs), so no soil excavations were undertaken at the facility;

2. Installation of a groundwater pump and treat system with air stripper was installed in January 1996 and the associated groundwater monitoring began. The system was shut off in February 2013 at the suggestion of the NYSDEC at a December 2012 meeting, while well monitoring continues;

3. Installation of a sub slab depressurization system in June 2009 based on the air sample data in Table 2 which evaluated the vapor intrusion potential in Plant 11.

4. Execution and recording of a Deed restriction on April 8, 2014 to restrict land use and prevent future exposure to any contamination remaining at the site.

5. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Deed restriction, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

1.4.1 Removal of Contaminated Materials from the Site

No materials were removed as part of the site remedy. The only soil removed was that which was removed during the tank replacement in 1990. This material was removed before the discovery of the groundwater contamination in 1994.

1.4.2 Site-Related Treatment Systems

A groundwater pump and treat system with air stripper was installed in January 1996. The collection system consists of a 170 foot long, 15 feet deep groundwater collection trench. The groundwater is then pumped to a 550 gallon capacity XLPE day tank and treated using a low-profile trayed air stripper. Treated effluent is discharged via storm sewer through SPDES permitted Outfall 004. The system was shut off in February 2013 at the suggestion of the NYSDEC while well monitoring continues. The location of the system is shown on Figure 1.

A sub slab depressurization system was installed in June 2009 based on air samples taken to evaluate the vapor intrusion potential in Plant 11. The system has three collection points and vents adjacent to Plant 11A on the east side of the building. Details of the installation are found in Appendix 5. The Mitigation System Installation Record Form is attached as Appendix 7. The three sub slab collection locations are shown as "suction location" on the survey in Appendix 1.

1.4.3 Remaining Contamination

There is no remaining soil contamination at the site. There remains a very low level of groundwater contamination and sub slab air contamination at the site. The groundwater contamination is confined to shallow groundwater 7 feet below ground surface. Table 3 below shows the most recent sampling event as of the 1st quarter 2015.

Table 3 – Groundwater Contaminant Concentrations – 1st Quarter 2015		
Parameter	March 27, 2015 Well Concentration (ug/L or ppb)(1)	6 NYCRR Part 703 Limit (ug/L or ppb)
1,1-Dichloroethene	Not Detected	5
1,1-Dichloroethane	3.6	5
cis-1,2-Dichloroethene	0.69	5
1,1,1-Trichloroethane	Not Detected	5
Trichloroethene	5.7	5
Tetrachloroethene	2.3	5
Trichlorotrifluoroethane (Freon 113)	9.1	5
(1) Contaminant concentration observed in MW-2B on March 27, 2015.		

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining groundwater/soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Deed Restriction;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs,; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Sub-slab Depressurization Systems (SSD)

The SSD system consists of three, 4-inch inside diameter (ID), Schedule 40 polyvinyl chloride (PVC) pipes that penetrate the building floor at three locations (suction points). For the purpose of describing system construction, these suction points are designated Suction Points North, South, and East, based on their locations within Building 11A. The suction points are connected to a suction fan by 4-inch ID Schedule 40 PVC piping. The suction fan, a Radonaway Model No. GP501, is mounted outside of the building's east wall about two feet below the roofline. A short 4-inch ID PVC pipe extends above the fan to place the system discharge about three feet above the roof line. The fan operates on 110 volts AC power.

Procedures for operating and maintaining the Sub-slab Depressurization System are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Sub-slab Depressurization System (SSD)

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC. Currently no indoor or sub-slab air monitoring data is being collected. In the event that future air monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

2.2.2.2 Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the NYSDEC to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to industrial or commercial uses only. Adherence to these Institutional Controls on the site is required by the Deed Restriction and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Deed Restriction and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater, soil vapor and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Deed Restriction. Site restrictions that apply to the Controlled Property are:

- The property may only be used for industrial or commercial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted or residential use without additional remediation and amendment of the Deed restriction, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
- The potential for vapor intrusion must be evaluated for any buildings developed in the area noted in Appendix 1, and any potential impacts that are identified must be monitored or mitigated;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted by request of the NYSDEC.

2.3.1 Soil Vapor Intrusion Evaluation

Prior to the occupancy of any enclosed structures located over areas that contain remaining contamination and the potential for soil vapor intrusion (SVI) has been identified (see Appendix 1), an SVI investigation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an

element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York". Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Deed Restriction;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under 6NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. Moog has an Emergency Action Plan detailing its response in the event of an emergency.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance Moog will contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Christopher Russin or Robin Young. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 3: Emergency Contact Numbers

Medical, Fire, and Police:	911
Moog Emergency Coordinator Hotline:	(716) 609-1371
Poison Control Center:	(800) 222-1222
Moog Hazmat Spills Hotline:	(716) 609-SPIL(7745)
NYSDEC Spills Hotline:	(800) 457-7362
Plant 11 Solvent Contamination	(716) 805-2110 – Christopher Russin

Table 4: Moog Contact Numbers

Christopher Russin	716-989-8966
Robin Young	716-609-2352

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Moog Inc.

Nearest Hospital Name: Mercy Hospital of Buffalo

Hospital Location: 565 Abbott Road, Buffalo, NY 14220

Hospital Telephone: 716-826-7000

Directions to the Hospital:

1. Get on NY-400 North in Elma Center (0.4 miles)

2. Follow NY-400 to West Seneca (8.2 miles). Exit at New York 16 / Seneca Street

3. Take Seneca Street to Abbott Road in Buffalo (1.8 miles)

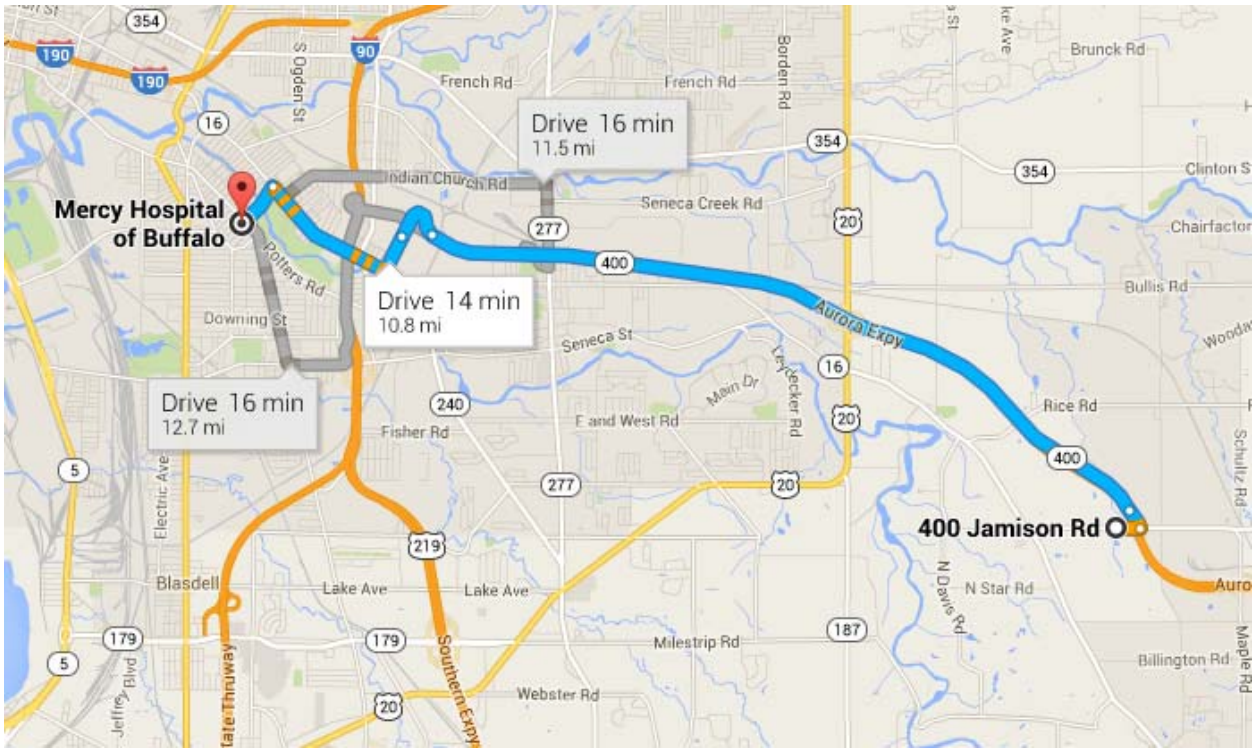
4. Turn left on Cazenovia Street (0.4 miles)

5. Hospital will be on left at corner of Abbott and Cazenovia

Total Distance: 10.8 miles

Total Estimated Time: 14 minutes

Map Showing Route from the site to the Hospital:



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found in Section 2.5.1 of this Plan (Table 3). All emergency response procedures are available in the Moog Emergency Action Plan, which is available to the NYSDEC upon request.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria;
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;

- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Annual monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first three (3) years. The frequency thereafter will be determined by NYSDEC, but will continue until clean-up levels are achieved or the NYSDEC gives written notification that monitoring can be discontinued. Trends in contaminant levels in groundwater in the affected areas, will be evaluated as requested by the NYSDEC to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 5 and outlined in detail in Sections 3.2 and 3.3 below.

Table 5: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater	Quarterly	Water	VOCs
Indoor Air	Weekly	Air	None – verify SSD is operational

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 MEDIA MONITORING PROGRAM

3.2.1 Groundwater Monitoring

Groundwater monitoring will be performed per Table 5 above to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor down-gradient groundwater conditions at the site. One upgradient well (MW-1B) was installed as well (October 1994 Work Plan). The network of on-site wells was designed and installed as documented in the April 1995 Remedial Action Plan. This plan has contains the following information:

- A discussion of well placement criteria;

- The depth and wells screened including cross-section;
- Baseline water levels and flow patterns;
- Baseline post remedial groundwater quality conditions;
- Monitoring well construction details; and
- Monitoring well construction logs.

Samples from wells MW-1B, MW-2A, MW-2B, MW-3, MW-4, MW-5, MW-6, and MW-7 are taken quarterly and analyzed for VOCs using EPA Method 8260C. Samples will be taken until groundwater meets clean-up standards. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.2.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in each Quarterly Groundwater Report. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network. Each quarterly report contains information on:

- Well gauging;
- Well purging;
- Sampling methodology;
- Analytical methodology:
    - Lab certification;
    - Analytical methods;
    - Analytes.

3.2.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable. Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. Assessments will only be conducted if the well shows signs of becoming unusable such as very high turbidity or evidence that the well has collapsed or become blocked.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.2.2 Indoor Air Monitoring

The sub-slab depressurization system will be inspected weekly to ensure that it is operating by verifying that each manometer on the 3 suction points shows a pressure differential.

3.3.2.1 SSD System Replacement and Decommissioning

Moog will repair the SSD system as needed to maintain operation. Indoor air sampling is not planned at this time, but may occur once groundwater levels attain cleanup standards. Any actions taken to decommission the SSD system will result in notification of the NYSDEC.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix 3). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance and Quality Control identified in each Groundwater Monitoring Report. These include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.

- Sample Tracking and Custody;
- Calibration Procedures:
    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
    - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.5 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared subsequent to each sampling event. The report will include, at a minimum:

- Date of event;

- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 6 below.

Table 6: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Quarterly Groundwater Monitoring	Quarterly
Remedy Evaluation	Once a year for the 1st three years; Then as requested by the NYSDEC

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor, and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the SSD system;
- Includes an operation and maintenance contingency plan; and,
- Will be updated if changes in site conditions or the manner in which the SSD systems are operated and maintained.

Information on non-mechanical Engineering Controls is provided in Section 3 - Site Monitoring Plan. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

4.2.1 Sub-slab Depressurization System

The SSD system was installed by US Radon, Inc., Harmony, Rhode Island, on June 23 and 24, 2009. It consists of a fan, associated piping and 3 suction points. As built drawings are found in the letter report to the NYSDEC dated July 16, 2009. The system has only one part that could malfunction and cause a system failure, the fan.

4.2.1.1 Scope

The system has no operation and maintenance requirements as constructed.

4.2.1.2 System Start-Up and Testing

The system should automatically restart following a power outage. If the system does not automatically restart the Electrical Maintenance department would be contacted to investigate fan operation. Once the fan is operational the 3 manometers at the suction points will be inspected to verify that there is a pressure differential. If there is no vacuum then the valves will be verified to be open. There is no other plausible identifiable condition that could cause a condition of no vacuum within the system.

The system testing described above will be conducted if, in the course of the SSD system lifetime, significant changes are made to the system, and the system must be restarted.

4.2.2.3 System Operation: Routine Operation Procedures

None identified. System will continue to run so long as there is electrical power.

4.2.3.4 System Operation: Routine Equipment Maintenance

No routine maintenance has been identified.

4.2.4.4 System Operation: Non-Routine Equipment Maintenance

As the fan is the only working part, it will be replaced upon failure. Failure will be identified by a valve inspection (verify that they are all in the open position) and manometer readings.

4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING

A Sub-slab depressurization system has been installed to mitigate possible soil vapor intrusion into a portion of an occupied building.

4.3.1 Monitoring Schedule

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the

operation of the system. Monitoring deliverables for the SSD system are specified later in this Plan.

4.3.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the monitoring event. SSD system components to be monitored include, but are not limited to, the following:

- Vacuum blower (pressure differential); and,
- General system piping.

A complete list of components to be checked is provided in the Inspection Checklist, presented in Appendix 4. If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSD system restarted.

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the site will be kept on-file on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

This section is not applicable.

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, records will be kept that include, but are not be limited to, the following information:

- Date;

- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Presence of leaks;
- Date of leak repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents ; and,
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc..

5. INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in the Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events for the SSD system will be recorded on the form in Appendix 4. Groundwater monitoring will be documented in quarterly reports which will be submitted to the NYSDEC when received by Moog from the preparer of the reports (currently Frontier Technical Associates). Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix 3). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;

- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the Remedial Action Plan.

5.2 CERTIFICATION OF INSTITUTIONAL CONTROLS

For each institutional control identified for the site, I certify that all of the following statements are true:

- The institutional control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the Deed Restriction.
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Christopher Russin of Moog Inc, 400 Jamison Road, East Aurora, NY], am certifying as Owner's Designated Site Representative for the site.
- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be in the form of a letter report summarizing operations and included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Region 9 Office in which the site is located, and in electronic format to NYSDEC Central Office, Region 9 Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

APPENDIX A – EXCAVATION WORK PLAN

A-1 NOTIFICATION

At least 15 days prior to the start of any activity within the deed restricted area (identified in Appendix 1) that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Utility maintenance activities such as replacing leaking water pipes or failed electrical conduit will be performed without notification, unless contamination is discovered during the work. Maintenance of the grounds such as replacing or installing sidewalks, re-paving parking lots, planting of new trees/shrubs or removal of dead trees or shrubs will also be performed without notification, unless contamination is discovered during the work. If contamination is discovered all work will immediately stop and the portions of this plan dealing with contaminated media will be implemented. Currently, this notification will be made to:

Martin Doster

Regional Hazardous Waste Remediation Engineer

270 Michigan Avenue
Buffalo, NY 14203-2999

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this Excavation Work Plan,

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

1. Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

2. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

3. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

If contamination is found then the materials shipped offsite will be managed in accordance with waste disposal rules.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

If necessary, a truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

Based on generator knowledge and the existing sample result data it is not anticipated that any soil will be encountered that contains contaminants. In the event that soil with discernable contamination is encountered, it will be disposed of in accordance all appropriate local, State and Federal regulations. In the unlikely event that contaminated

soil is discovered a soil management plan will be created at that time and submitted to the DEC.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

All materials with the exception of non-contaminated fill, will be disposed of off-site. There will be no re-use of contaminated materials from de-construction of Building 11.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

Moog is not currently maintaining an existing cover system. Since the current contamination is limited to groundwater, a cover system is not necessary or applicable for this facility.

A-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 375-6.8(a). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

In the event that Moog starts a construction project exceeding 1 acre, a Stormwater Pollution Prevention Plan will be developed and submitted to the NYSDEC by the contractor (or their environmental subcontractor) hired to do the construction.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

A-13 COMMUNITY AIR MONITORING PLAN

In the event that Moog disturbs the soil at groundwater levels at the Building 11 deed restricted area, a Community Air Monitoring Plan will be developed by the contractor or their environmental contractor at that time and submitted to the NYSDEC.

A-14 ODOR CONTROL PLAN

In the event that Moog disturbs the soil at groundwater levels at the Building 11 deed restricted area, an Odor Control Plan will be submitted as part of the Community Air Monitoring Plan and submitted to the NYSDEC.

A-15 DUST CONTROL PLAN

In the event that Moog disturbs the soil at groundwater levels at the Building 11 deed restricted area, a Dust Control Plan will be submitted as part of the Community Air Monitoring Plan and submitted to the NYSDEC.

A-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances. These plans are not required to be submitted to the NYSDEC.

Figure 1 – Figure of Site and Site Boundaries

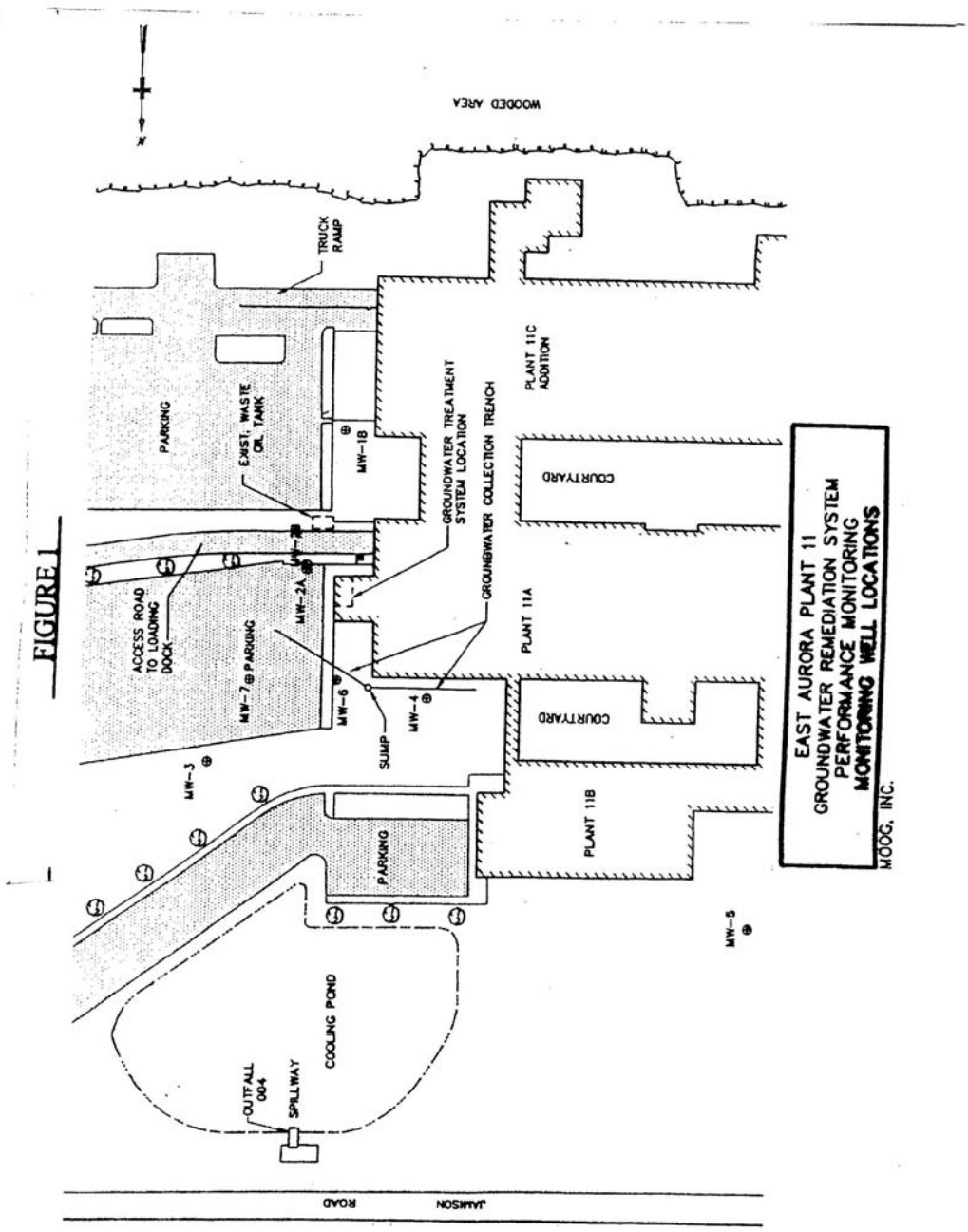
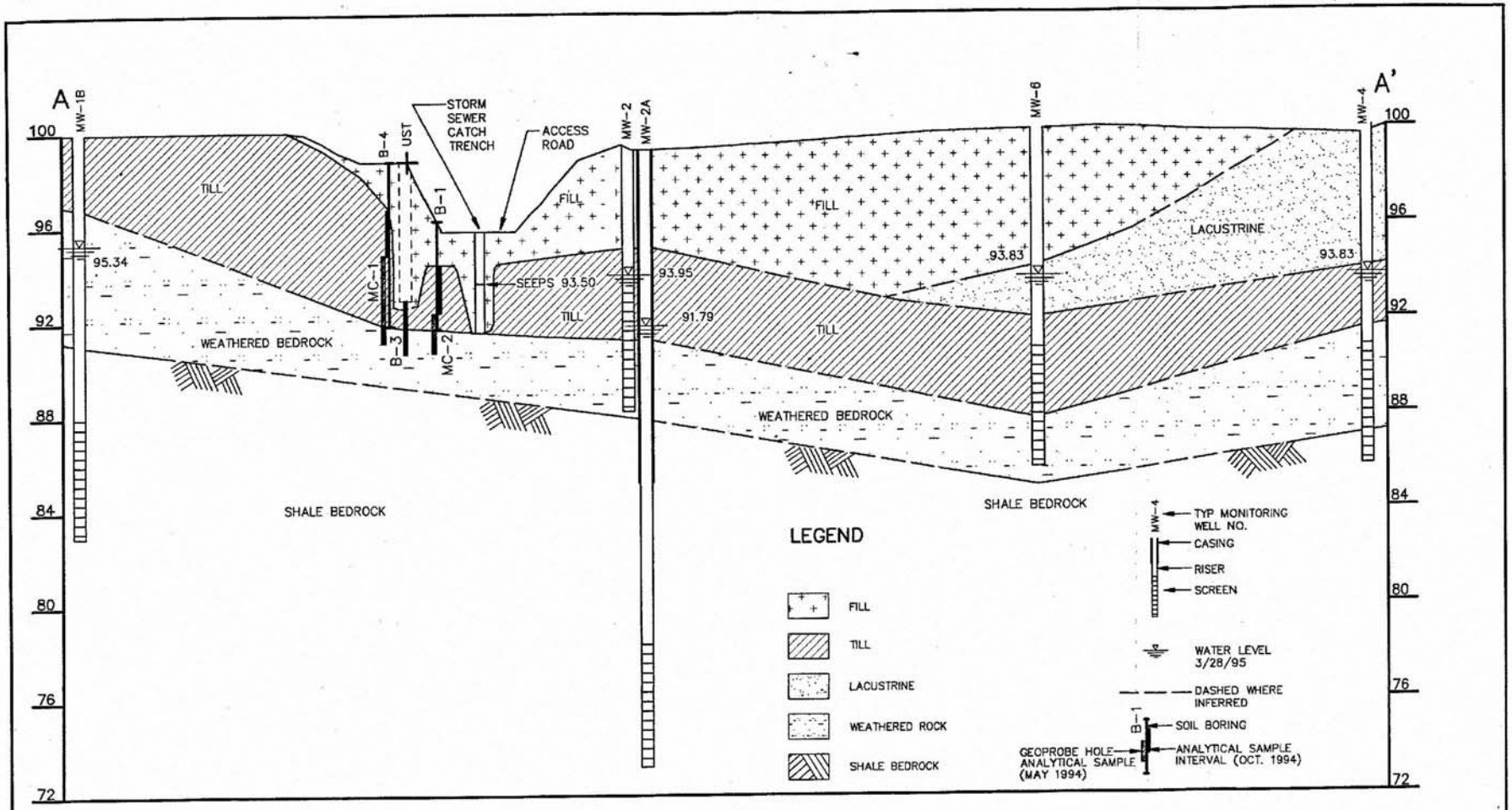


Figure 2– Geological Section

FIGURE 4



NOTE: ELEVATIONS IN FEET (REFERENCE: FINISHED FLOOR EL. 100')

SCALE: HORIZ. 1"= 20', VERT. 1" = 4'

MALCOLM PIRNIE

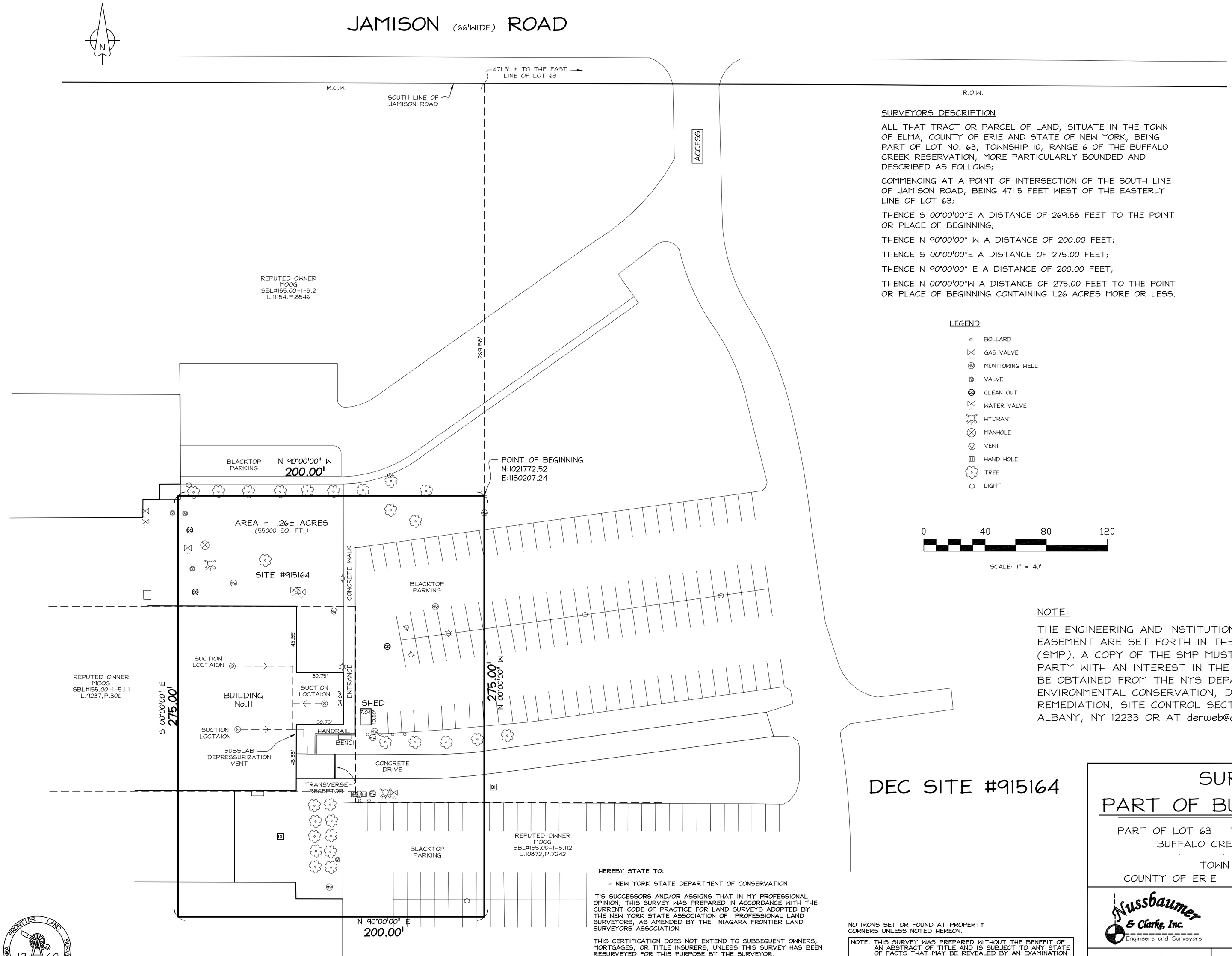
MOO-00-SEC

PLANT II
REMEDIAL EVALUATION
CROSS SECTION A–A'

MOOG, INC.

APRIL 1995

APPENDIX 1 – METES AND BOUNDS



SURVEYORS DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND, SITUATE IN THE TOWN OF ELMA, COUNTY OF ERIE AND STATE OF NEW YORK, BEING PART OF LOT NO. 63, TOWNSHIP 10, RANGE 6 OF THE BUFFALO CREEK RESERVATION, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT OF INTERSECTION OF THE SOUTH LINE OF JAMISON ROAD, BEING 471.5 FEET WEST OF THE EASTERLY LINE OF LOT 63;

THENCE S 00°00'00"E A DISTANCE OF 269.58 FEET TO THE POINT OR PLACE OF BEGINNING;

THENCE N 90°00'00" W A DISTANCE OF 200.00 FEET;

THENCE S 00°00'00"E A DISTANCE OF 275.00 FEET;

THENCE N 90°00'00" E A DISTANCE OF 200.00 FEET;

THENCE N 00°00'00"W A DISTANCE OF 275.00 FEET TO THE POINT OR PLACE OF BEGINNING CONTAINING 1.26 ACRES MORE OR LESS.

LEGEND

- BOLLARD
- GAS VALVE
- MONITORING WELL
- VALVE
- CLEAN OUT
- WATER VALVE
- HYDRANT
- MANHOLE
- VENT
- HAND HOLE
- TREE
- LIGHT

0 40 80 120

SCALE: 1" = 40'

NOTE:

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 624 BROADWAY, ALBANY, NY 12233 OR AT derweb@gw.dec.state.ny.us

DEC SITE #915164

I HEREBY STATE TO:

- NEW YORK STATE DEPARTMENT OF CONSERVATION

IT'S SUCCESSORS AND/OR ASSIGNS THAT IN MY PROFESSIONAL OPINION, THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CURRENT CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, AS AMENDED BY THE NIAGARA FRONTIER LAND SURVEYORS ASSOCIATION.

THIS CERTIFICATION DOES NOT EXTEND TO SUBSEQUENT OWNERS, MORTGAGES, OR TITLE INSURERS, UNLESS THIS SURVEY HAS BEEN RESURVEYED FOR THIS PURPOSE BY THE SURVEYOR.

MICHAEL J. ENNIS, PLS LICENSE NO. 50415

NO IRONS SET OR FOUND AT PROPERTY CORNERS UNLESS NOTED HEREON.

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO ANY SURVEY, DRAWING, DESIGN, SPECIFICATION, PLAN, OR REPORT IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NIAGARA FRONTIER LAND SURVEYORS Association Inc. 19 60
MEMBER

SURVEY OF PART OF BUILDING NO. 11

PART OF LOT 63 TOWNSHIP 10 RANGE 6
BUFFALO CREEK RESERVATION

TOWN OF ELMA
COUNTY OF ERIE STATE OF NEW YORK

Nussbaumer & Clarke, Inc. Engineers and Surveyors
3556 Lake Shore Road
Buffalo, New York 14219-1494
(716) 827-8000
www.nussclarke.com

DRAWN BY: JPG	REV. 9-19-13	SHEET NO.
DATE: 08/28/2013	JOB NO. 13J2-0805	OF
SCALE: 1" = 40'	DWG. NO.	

Successors to the records of Graf Land Surveyors
Successors to the records of James L. Shisler, Land Surveyor

APPENDIX 2 – DEED RESTRICTION

CHRISTOPHER L. JACOBS, ERIE COUNTY CLERK
REF:

DATE:4/8/2014
TIME:2:03:12 PM
RECEIPT: 14054571

HODGSON RUSS
ACCOUNT #: 0

ITEM - 01 774
RECD: 4/8/2014 2:04:34 PM
FILE: 2014068503 BK/PG D 11262/6255
MOOG INC
Recording Fees 80.00
Subtotal 80.00

TOTAL DUE $80.00
PAID TOTAL $80.00
PAID CASH $80.00

REC BY: Loretta
COUNTY RECORDER

DECLARATION of COVENANTS and RESTRICTIONS

THIS COVENANT is made the 4th day of April 2014, by Moog Inc., a corporation organized and existing under the laws of the State of New York and having an office for the transaction of business at 300 Jamison Rd., Elma, NY 14059-9526.

WHEREAS, Moog Inc. - Building 11 (Site #915164) is being addressed under the New York State Department of Environmental Conservation's (the "Department's) State Superfund Program, and is that parcel of real property located at the address of 300 Jamison Rd. in the Town of Elma, County of Erie, State of New York, being more particularly described in **Schedule "A,"** attached to this declaration and made a part hereof and being part of that property conveyed to Moog Inc. pursuant to the deeds described in **Schedule "B,"** attached to this declaration and made a part hereof, and hereinafter referred to as "the Property"; and

WHEREAS, the Department approved a remedy to eliminate or mitigate all significant threats to the environment presented by the contamination disposed at the Property and such remedy requires that the Property be subject to restrictive covenants.

NOW, THEREFORE, Moog Inc., for itself and its successors and/or assigns, covenants that:

First, the Property subject to this Declaration of Covenants and Restrictions is as shown on a map attached to this declaration as **Schedule "C"** and made a part hereof.

Second, unless prior written approval by the Department or, if the Department shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the Property subject to the provisions of the Site Management Plan ("SMP"), there shall be no construction, use or occupancy of the Property that results in the disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results in unacceptable human exposure to contaminated soils. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233.

Third, the owner of the Property shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of engineering controls required for the Remedy, which are described in the SMP, unless in each instance the owner first obtains a written waiver of such prohibition from the Department or Relevant Agency.

Fourth, the owner of the Property shall prohibit the Property from ever being used for purposes other than for Commercial use as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial use as described in 6 NYCRR Part 375-1.8(g)(2)(iv) without the express written waiver of such prohibition by the Department or Relevant Agency.

Fifth, the use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Erie County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.

Sixth, the owner of the Property shall provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department or Relevant Agency, which will certify that the institutional and engineering controls put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

Seventh, the owner of the Property shall continue in full force and effect any institutional and engineering controls required for the Remedy and maintain such controls, unless the owner first obtains permission to discontinue such controls from the Department or Relevant Agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the Department or Relevant Agency.

Eighth, this Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the Property, and shall provide that the owner and its successors and assigns consent to enforcement by the Department or Relevant Agency of the prohibitions and restrictions that the Department or Relevant Agency requires to be recorded, and hereby covenant not to contest the authority of the Department or Relevant Agency to seek enforcement.

Ninth, any deed of conveyance of the Property, or any portion thereof, shall recite, unless the Department or Relevant Agency has consented to the termination of such covenants and restrictions, that said conveyance is subject to this Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, the undersigned has executed this instrument the day written below.

MOOG INC.

By: Donald R Fishback

Print Name: Donald Fishback

Title: CFO Date: April 4, 2014

Grantor's Acknowledgment

STATE OF NEW YORK)

) s.s.:

COUNTY OF ERIE)

On the 4th day of April, in the year 2014, before me, the undersigned, personally appeared Donald Fishback, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name 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.

Randy C Fahs

Notary Public State of New York

RANDY C. FAHS
NOTARY PUBLIC-STATE OF NEW YORK
No. 02FA4956682
Qualified in Erie County
My Commission Expires October 02, 2017

SCHEDULE "A"

ALL THAT TRACT OR PARCEL OF LAND, SITUATE IN THE TOWN OF ELMA, COUNTY OF ERIE AND STATE OF NEW YORK, BEING PART OF LOT NO. 63, TOWNSHIP 10, RANGE 6 OF THE BUFFALO CREEK RESERVATION, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT OF INTERSECTION OF THE SOUTH LINE OF JAMISON ROAD, BEING 471.5 FEET WEST OF THE EASTERLY LINE OF LOT 63;

THENCE S 00°00'00" E A DISTANCE OF 269.58 FEET TO THE POINT OR PLACE OF BEGINNING;

THENCE N 90°00'00" W A DISTANCE OF 200.00 FEET;

THENCE S 00°00'00" E A DISTANCE OF 275.00 FEET;

THENCE N 90°00'00" E A DISTANCE OF 200.00 FEET;

THENCE N 00°00'00" W A DISTANCE OF 275.00 FEET TO THE POINT OR PLACE OF BEGINNING CONTAINING 1.26 ACRES MORE OR LESS.

Schedule "B"

The Property is part of that property conveyed to Moog Inc. pursuant to the following deeds:

Warranty Deed with full covenants made by Erie County Industrial Development Agency to Moog, Inc., dated June 7, 1994 and recorded on June 15, 1994 in the Erie County Clerk's Office in Liber 10872 of Deeds, at page 7242.

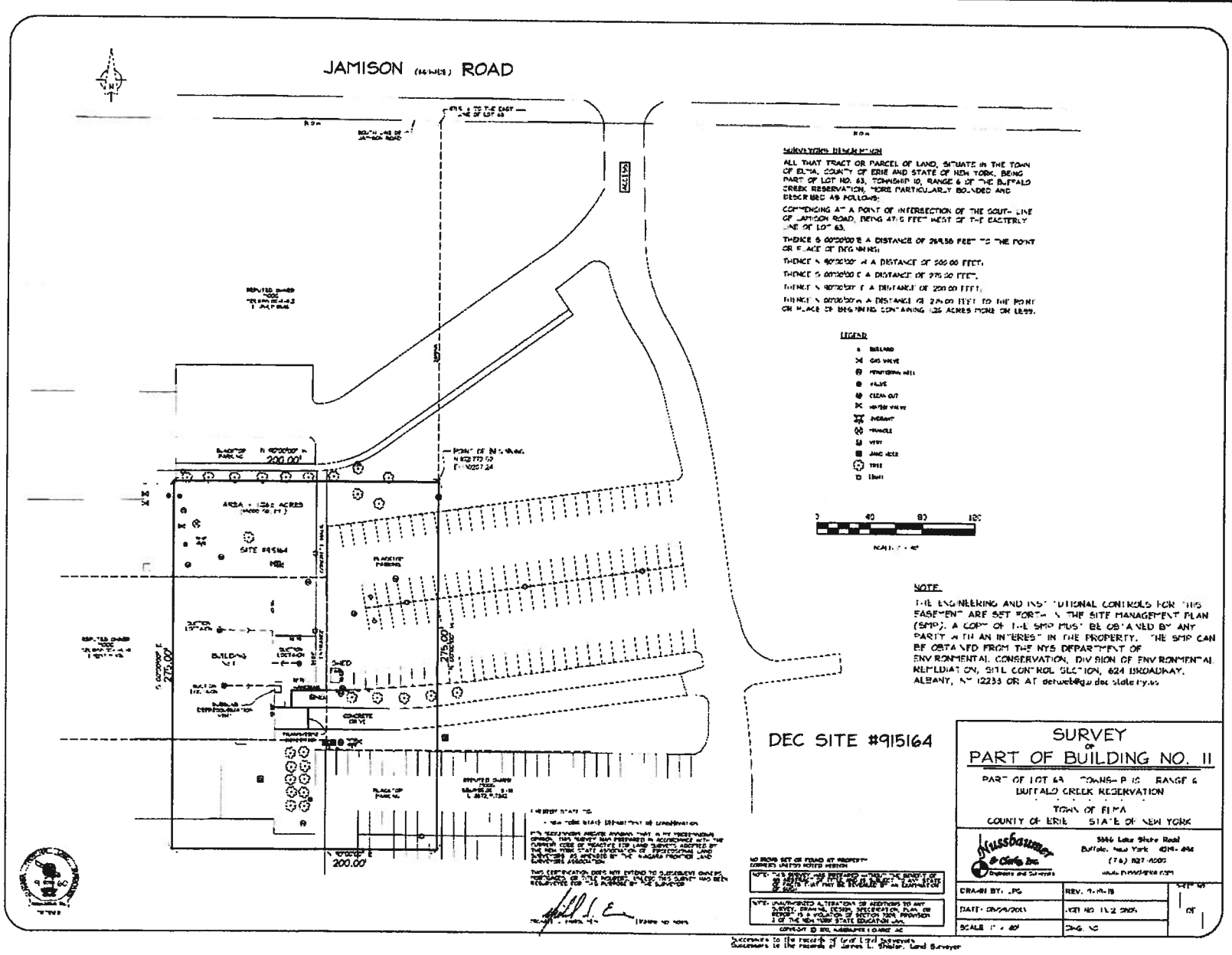
Warranty Deed with full covenants made by Empire State Allsub corporation, as survivor by merger of UDC -Aurora Development Corp. to Moog Inc., dated January 26, 2009 and recorded on January 29, 2009 in the Erie County Clerk's Office in Liber 11154 of Deeds, at page 8546.

Warranty Deed with full covenants made by Harry C. Prodoehl to East Aurora Realty Co., Inc. dated April 9, 1956 and recorded on April 16, 1956 in the Erie County Clerk's Office in Liber 5969 of Deeds, at page 227.

Warranty Deed with full covenants made by Harry C. Prodoehl to Moog Servocontrols, Inc., dated March 2, 1961 and recorded on March 2, 1961 in the Erie County Clerk's Office in Liber 6638 of Deeds, at page 127.

SCHEDULE "C"

See attached survey map.



APPENDIX 3 – ANNUAL INSPECTION FORM

Question	Yes	No	Comments
Is the facility in compliance with the industrial control that only industrial, commercial or other non-residential use of the land is being adhered to?			
Is the sub slab depressurization system in good working order?			
What were the site weather conditions at time of inspection?			
Are any activities being conducted that require the activation of this site management plan or that violate the deed restriction?			
Is the facility in compliance with all permits and schedules included in the O&M Plan?			
Are site records up to date? Confirm.			

APPENDIX 4 – SSD SYSTEM WEEKLY INSPECTION FORM

SVI Subslab Depressurization System Inspection - Weekly Check - 2014

WEEK – Starting Date										
1/5/2014 ☐	1/12/2014 ☐	1/19/2014 ☐	1/26/2014 ☐	2/2/2014 ☐	2/9/2014 ☐	2/16/2014 ☐				
2/23/2014 ☐	3/2/2014 ☐	3/9/2014 ☐	3/16/2014 ☐	3/23/2014 ☐	3/30/2014 ☐	4/6/2013 ☐				
4/13/2014 ☐	4/20/2014 ☐	4/27/2014 ☐	5/4/2014 ☐	5/11/2014 ☐	5/18/2014 ☐	5/25/2014 ☐				
6/1/2014 ☐	6/8/2014 ☐	6/15/2014 ☐	6/22/2014 ☐	6/29/2014 ☐	7/6/2014 ☐	7/13/2014 ☐				
7/20/2014 ☐	7/27/2014 ☐	8/3/2014 ☐	8/10/2014 ☐	8/17/2014 ☐	8/24/2014 ☐	8/31/2014 ☐				
9/7/2014 ☐	9/14/2014 ☐	9/21/2014 ☐	9/28/2014 ☐	10/5/2014 ☐	10/12/2014 ☐	10/19/2014 ☐				
10/26/2014 ☐	11/2/2014 ☐	11/9/2014 ☐	11/16/2004 ☐	11/23/2014 ☐	11/30/2014 ☐	12/7/2014 ☐				
12/14/2014 ☐	12/21/2014 ☐	12/28/2014 ☐								

This Calendar documents that the SVI system shows a manometer difference (illustrating a difference in pressure between inside and outside of the pipe) at each of the three monitoring points. A manometer difference means that the system is functioning properly. The documentation is with an checked box next to each week in the calendar above.

APPENDIX 5 – SSD SYSTEM LETTER REPORT –

07-16-2009

July 16, 2009

Mr. David Szymanski
New York State Department of Environmental Conservation
Division of Environmental Remediation
Region 9
270 Michigan Ave.
Buffalo, NY 14203

RE: Subslab Depressurization System Installation – Moog Plant 11

Dear Mr. Szymanski:

URS Corporation (URS) is pleased to present this letter report documenting the installation of a subslab depressurization (SSD) system at Moog, Inc.'s Plant 11 facility. The SSD system was installed by US Radon, Inc., Harmony, Rhode Island, on June 23 and 24, 2009 under direct oversight by URS.

Background

A spill at the eastern portion of Plant 11 previously resulted in groundwater contamination containing chlorinated solvents, principally 1,1-dichloroethane (1,1-DCA) with lower levels of other chlorinated ethanes, chlorinated ethenes, and freon. Moog, Inc. (Moog) has been operating a groundwater collection and treatment system for over ten years, resulting in a significant decrease in solvent concentrations in the groundwater. However, 1,1-DCA levels have remained as high as 210 µg/L in monitoring well MW-2B located east of the plant, suggesting that SVI may be an exposure pathway of concern at this site. Concentrations in wells MW-4 and MW-6, located north and northeast of the spill areas, respectively, have shown lower levels of 1,1-DCA, but are located downgradient of the groundwater collection trench and thus may not reflect groundwater concentrations beneath the plant slab.

URS conducted a soil vapor intrusion (SVI) investigation at Building 11A in May 2008 to assess the potential of soil vapor contamination of the eastern portion of Building 11A. This SVI study was limited in scope to Building 11A in the area of the inferred groundwater plume. As a result of the SVI investigation results, Moog elected to conservatively move straight to mitigation via installation of an SSD system at the eastern portion of Building 11A.

Subsequently, Moog contracted URS to prepare a SVI Mitigation Plan (Plan). URS prepared this Plan in accordance with guidelines specified in the New York State Department of Health (NYSDOH), 2006 "Guidance for Evaluating Soil Vapor Intrusion in the State of New York. This plan specified the proposed locations of the subslab vapor extraction points and described the portion of the building that would be subject to subslab depressurization. Moog submitted this Plan to the New York State Department

of Environmental Conservation (NYSDEC) and the NYSDOH for review and approval. Moog received approval of this approach from the state for installation in March, 2009.

This report documents the SSD system in accordance with the approved SVI Mitigation Plan.

Subslab Depressurization System Installation

The SSD system consists of three, 4-inch inside diameter (ID), Schedule 40 polyvinyl chloride (PVC) pipes that penetrate the building floor at three locations (suction points). For the purpose of describing system construction, these suction points are designated Suction Points North, South and East, based on their locations within Building 11A. The suction points are connected to a suction fan by 4-inch ID Schedule 40 PVC piping. The suction fan, a Radonaway Model No. GP501, is mounted outside of the building's east wall about two feet below the roofline. A short 4-inch ID PVC pipe extends above the fan to place the system discharge about three feet above the roof line. The fan operates on 110 volts AC power. All electrical hookups were made by Moog electricians. A generalized view of the SSD system construction is shown on Figure 1.

Two of the suction points (Suction Points North and South) are located in the eastern portion of the building adjacent to building roof support columns. The locations of these two suction points are dictated by the location of the support columns along which the suction pipe may run. The actual suction points at these two locations were offset approximately two feet from the base of the column to avoid the column footer. The third suction point (Suction Point East) is located in a small addition that is separated from the main building by a concrete structural footer. This addition is presently occupied by the maintenance department and also houses a groundwater remediation system. Suction point locations are shown on Figure 2. System construction is documented in a photographic log provided in Attachment 1.

Each of the suction points has a valve that can be used to adjust the air flow from each suction point. Each suction point also has a manometer placed in the piping above the floor penetration that measures vacuum at each suction point.

Subslab Depressurization System Testing.

Following construction and installation of the SSD system components, the fan was turned on and the system effectiveness measured by collecting vacuum readings from seven 3/8-inch diameter test holes. Vacuum readings were recorded using a portable differential pressure gauge. Test hole locations are shown on Figure 2. Measured vacuum readings from the test holes are provided in Table 1. Vacuum readings averaged 0.050 inches of water, and ranged from 0.001 inches of water in Test Hole 2, at the southeast corner of Building 11A, to 0.089 inches of water at Test Hole 7 in the building addition. Vacuum readings at the three suction points ranged from 1.1 to 1.6 inches of water as measured on the manometers affixed to each suction point. Final suction point

vacuum measurements are presented in Table 1. All of the test holes were sealed with concrete caulk after testing.

The lowest vacuum readings were measured in the two corners of Building 11A. Readings of 0.001 and 0.002 inches of water were recorded at Test Holes 2 and 6, respectively. Because these points were located at the building corners, they represent the most difficult area at which to obtain depressurization. Although these readings are low, the readings were steady and clearly show that the system has created a negative pressure field extending from well within the building to the walls at the northeastern portion of building 11A. The remainder of the vacuum readings from the test holes were 0.037 inches of water and higher which demonstrate excellent pressure field extension.

The vacuum readings from the test holes and manometers indicate that the system has created a subslab negative pressure field that is sufficient to significantly reduce the likelihood of subslab vapors entering the building.

Operation and Maintenance.

On July 15, 2009, URS performed an operation and maintenance (O&M) training session to Moog building maintenance personnel on the operation and maintenance of the SSD system. Moog maintenance personnel will regularly check the vacuums measured by the manometers at each of the three suction points. Should no vacuum be observed at any time, this would be a symptom of fan failure and Moog would replace or repair the fan.

Sincerely,

URS Corporation – New York

Sheldon S. Nozik, P.G., CHMM
Project Manager

CC: Cameron O'Connor, NYSDOH
Christopher Russin, Moog
Jon Sundquist – URS
John Boyd – URS
File – 11175046 (C-1)

Figures: Figure 1 - Generalized View of the SSD System
Figure 2 - Suction Point Locations

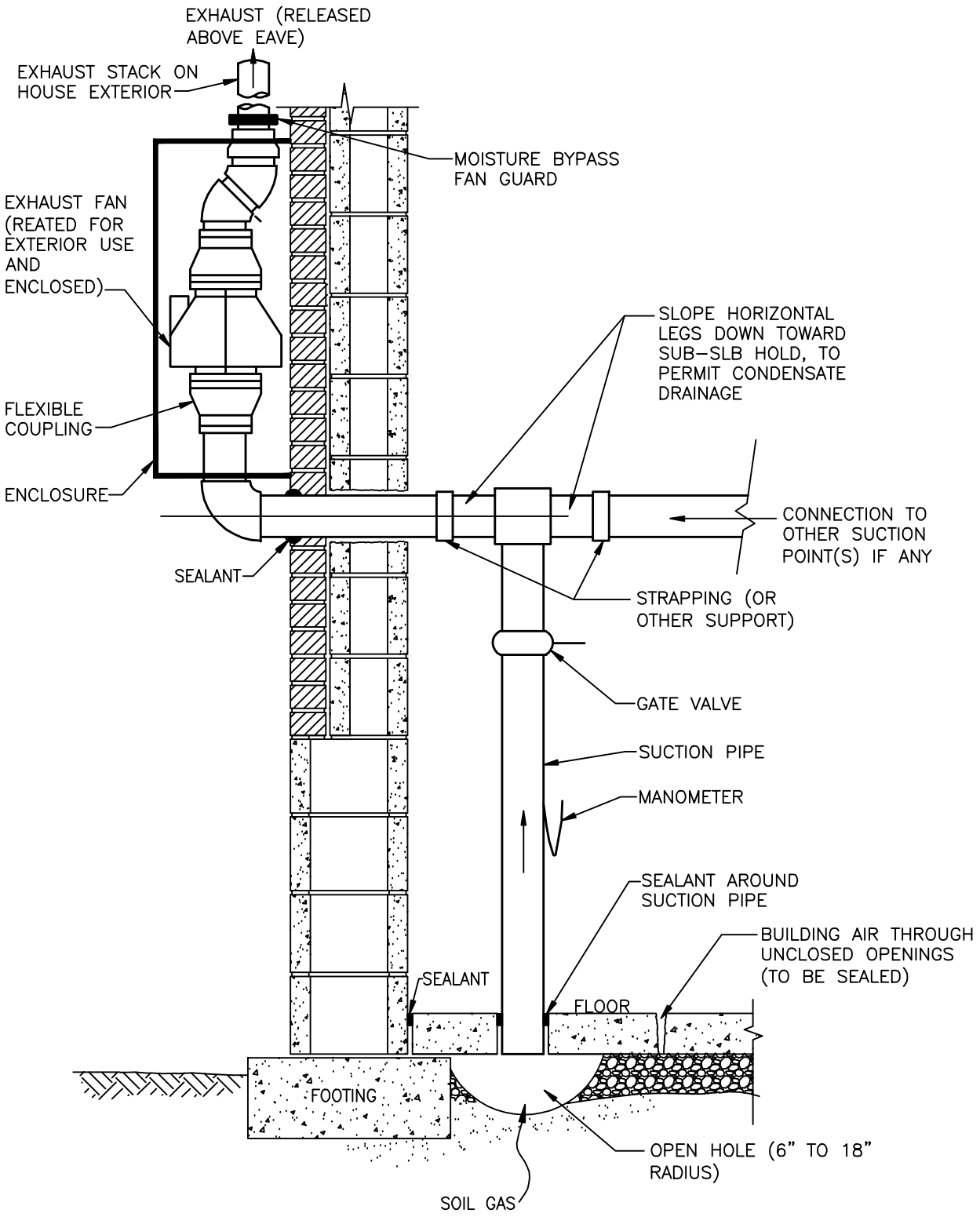
Attachments: Photographic Log

URS

Table 1
Subslab Depressurization System Vacuum Measurements
Building 11A, Moog, Inc. East Aurora, NY

Vacuum Monitoring Location	Date	Vacuum Reading (inches of water column)
Vacuum Test Point 1	June 24, 2009	0.038
Vacuum Test Point 2	June 24, 2009	0.001
Vacuum Test Point 3	June 24, 2009	0.070
Vacuum Test Point 4	June 24, 2009	0.080
Vacuum Test Point 5	June 24, 2009	0.037
Vacuum Test Point 6	June 24, 2009	0.002
Vacuum Test Point 7	June 24, 2009	0.089
Suction Point North	June 24, 2009	1.10
Suction Point South	June 24, 2009	1.50
Suction Point East	June 24, 2009	1.60

Q:\Sundquist, Jon\Figure 2\FIGURE 2.dwg 9/17/08



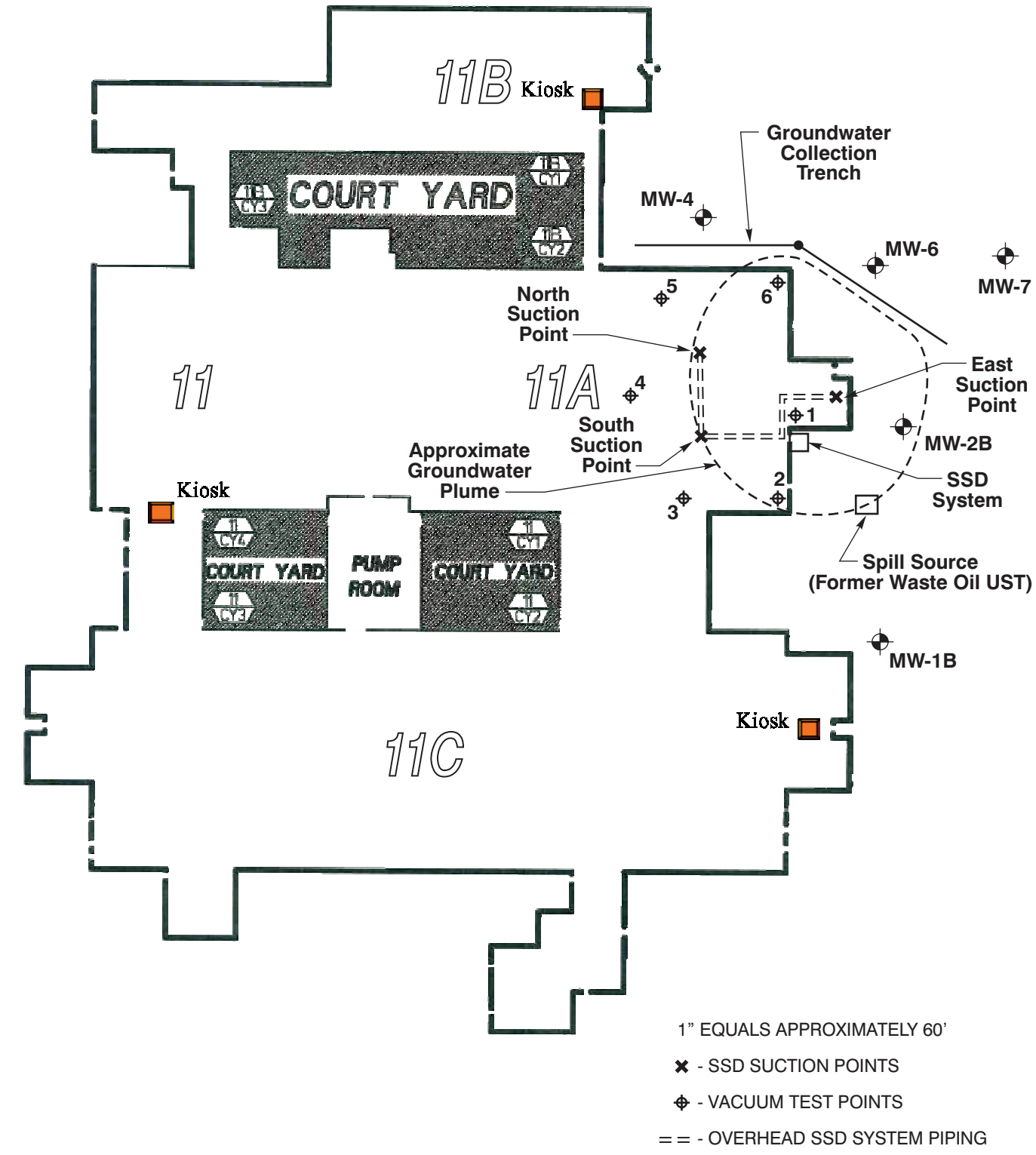
NOT TO SCALE

FIGURE 2

URS

MOOG, INC., SSD SYSTEM INSTALLATIONS
TYPICAL DEPRESSURIZATION VENT AND EXHAUST PIPING

FIGURE 1



URS

MOOG, INC.
LOCATIONS OF SSD SYSTEM
SUCTION POINTS AND VACUUM TEST POINTS

FIGURE 2

AG20125A-11175481-071709-GCM

ATTACHMENT 1
PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG
Moog, Inc. Building 11 SSD System Installation
East Aurora, New York

Looking west at “South” suction point, flow adjustment valve and manometer.

Looking northeast at “North” suction point and flow adjustment valve.

PHOTOGRAPHIC LOG
Moog, Inc. Building 11 SSD System Installation
East Aurora, New York

Looking south at “North” suction point and manometer.

Looking southwest at routing of pipe from suction point “South” to system fan (left) and to suction point “North” (right).

PHOTOGRAPHIC LOG
Moog, Inc. Building 11 SSD System Installation
East Aurora, New York

Looking west at suction point “East” with flow adjustment valve and manometer.

Looking west at piping from suction point “East” to main building via pipe-run through adjacent suspended ceiling.

PHOTOGRAPHIC LOG
Moog, Inc. Building 11 SSD System Installation
East Aurora, New York

Looking east at junction of piping from suction point “East” (left), piping from suction points “South” and “North” (right) and exit of system piping to outside mounted fan.

Looking south at system fan mounted on east wall of Building 11.

APPENDIX 6 –EAST AURORA TANK REGISTRATION

PBS Number
9-600288

New York State Department of Environmental Conservation
PETROLEUM BULK STORAGE CERTIFICATE

625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 9 NYSDEC - PBS Unit
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7220

TANK NUMBER	TANK LOCATION	DATE INSTALLED	TANK TYPE	PRODUCT STORED	CAPACITY (GALLONS)	DATE LAST TESTED	TESTING DUE DATE
PLANT 11	Underground	05/01/1991	Steel/Carbon Steel/Iron	Waste Oil/Used Oil	1,000		
PLANT 11 -A	Aboveground - in contact with impervious barrier	04/01/2009	Steel/Carbon Steel/Iron	Diesel	200		*
PLANT 2	Underground	05/01/1991	Steel/Carbon Steel/Iron	Waste Oil/Used Oil	2,000	10/22/2009	
PLANT 20-A	Aboveground - in contact with impervious barrier	10/14/1997	Steel/Carbon Steel/Iron	Diesel	400		*
PLANT 20-B	Aboveground - in contact with impervious barrier	05/28/2010	Steel/Carbon Steel/Iron	Diesel	600		*
PLANT 3	Aboveground - in contact with impervious barrier	04/03/2000	Steel/Carbon Steel/Iron	Diesel	600		*

*** Aboveground tanks require monthly visual inspections and may need documented internal inspections as described in 6 NYCRR Part 613**

OWNER:
MOOG INC
SENECA STREET
EAST AURORA, NY 14052

SITE:
MOOG INC
SENECA STREET

EAST AURORA, NY 14052

ON-SITE OPERATOR: MARION WOCH (716) 687-4668
PRIMARY OPERATOR:
EMERGENCY CONTACT: ROBIN YOUNG (716) 687-4157

MAILING CORRESPONDENCE:

ROBIN YOUNG
MOOG INC
SENECA STREET
EAST AURORA, NY 14052

ISSUED BY: Commissioner
Joe Martens
PBS NUMBER: **9-600288**
DATE ISSUED: 12/12/2011
EXPIRATION DATE: 12/02/2016
FEE PAID: $300.00

As an authorized representative of the above named facility I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, and applicable sections of 6 NYCRR Subpart 374-2 (used oil tanks only), not just those cited below:

-- The facility must be re-registered if there is a transfer of ownership
-- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank
-- The facility must be operated in accordance with the code for storing petroleum 6NYCRR Part 613.
-- Any new facility or substantially modified facility must comply with 6NYCRR Part 614.
-- **This certificate must be signed and posted on the premises at all times.** Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.
-- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours **(1-800-457-7362)**.

Robin Young 12-19-11
Signature of Representative/ Owner Date

Robin Young - Environmental & Process Specialist
Name and Title of Authorized Representative/Owner (Please Print)

Print Date: 12/16/2011

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

APPENDIX 7 – MITIGATION SYSTEM INTALLATION RECORD FORM

Mitigation System Installation Record

☐ Structure was sampled previously

System Information

Site No: 915164

System ID: Moog - Building 11

Site Name: Moog Inc. Building 11

Owner Name: Moog Inc.

☒ Owner Occupied

System Address: 300 Jamison Road

Telephone: 716-652-2000

City: East Aurora Zip: 14052

Alt. Telephone: 716-805-2110

Contractor Information

Installer Name: Oversight by Sheldon Nozik, PE - URS

Company: U.S. Radon Inc.

Telephone: 866-723-6664

Building Conditions

Building Type: Manufacturing

Slab Integrity: ○ Poor ○ Average ○ Good ◉ Excellent

Slab Penetrations: ☐ Sump ☐ Floor drain ☐ Perimeter drain ☐ Other

Describe:

There are no slab penetrations in the area where the sub-slab depressurization system was installed.

Observed Water: ◉ Dry ○ Damp ○ Sump only ○ Standing

Describe:

Only drilled through ground level slab to gravel run underneath building. Groundwater does not occur until approximately 7 feet below ground surface.

System Installation

Installation Type: Sub-Slab Depressurization (Active)

Date Installed: Jun 24, 2009

Slab Thickess (inches): >5 in.

Subslab Material: Gravel

Subslab Moisture: Dry

Number of Suction Points: 3

Number of Fans Installed: 1

	☒ Fan #1 Operating	☐ Fan #2 Operating	☐ Fan #3 Operating
Fan Model No(s):	Radonaway GP501		
Fan Serial No(s):	Part# 23005-1		
Final U-Tube Levels:	min 1.10 inches wa		

Additional Mitigation Elements (check all that apply):

☐ Drainjer ☐ Membrane ☐ Sealed cracks ☐ New floor ☐ Rain cap ☐ Other

Comments:

None required. The only slab penetrations were for the depressurization system itself.

Communication Testing

Test Method: Micromanometer Meter Type/Manufacturer: differential pressure gauge

Location	Reading/Result	Dist. From Suction Point (ft)	Passed?
See TABLE 1 attached			☐
			☐
			☐
			☐
			☐

NORTH

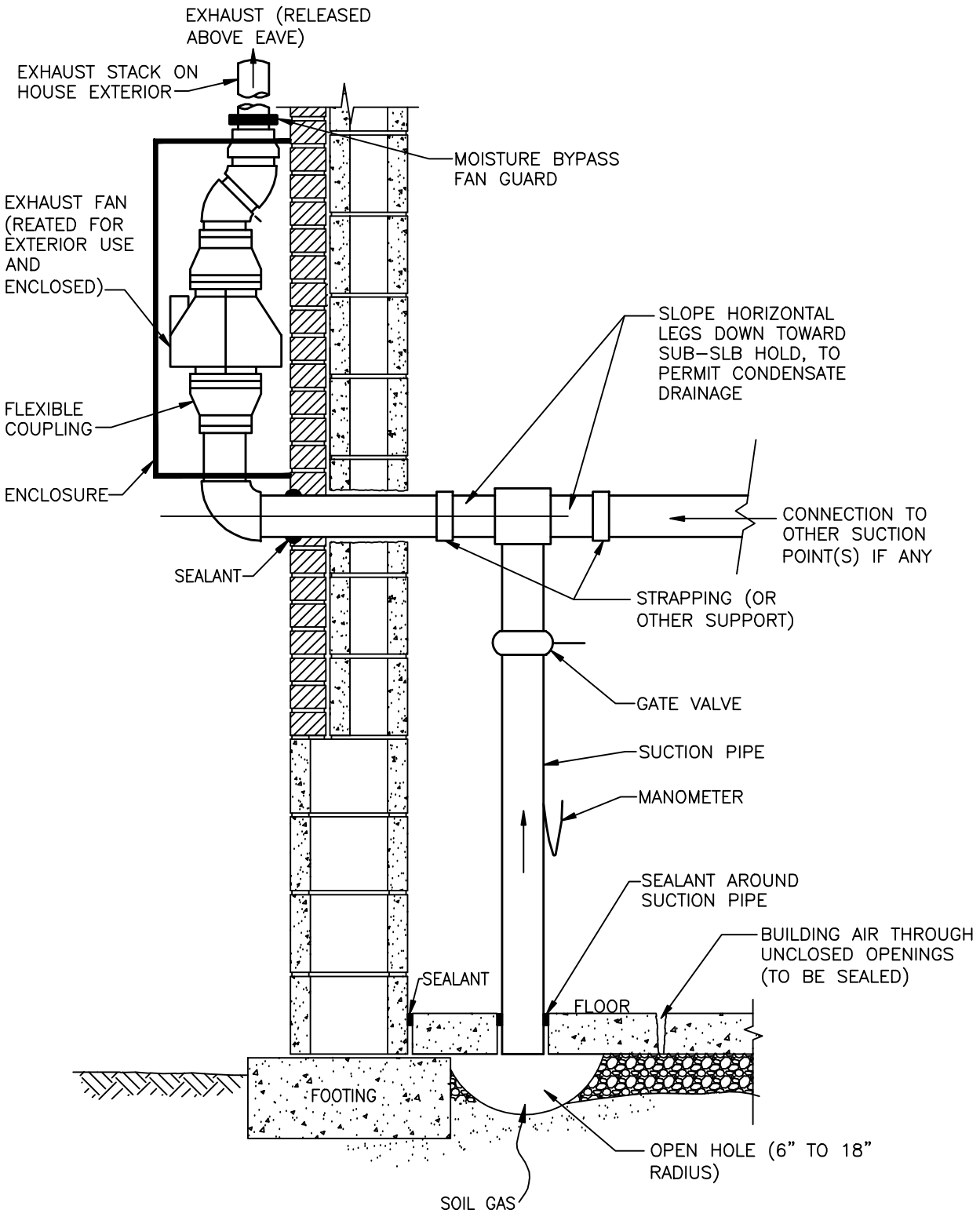
System Sketch
(indicate notable features, location of extraction points, and communication test holes)

URS

Table 1
Subslab Depressurization System Vacuum Measurements
Building 11A, Moog, Inc. East Aurora, NY

Vacuum Monitoring Location	Date	Vacuum Reading (inches of water column)
Vacuum Test Point 1	June 24, 2009	0.038
Vacuum Test Point 2	June 24, 2009	0.001
Vacuum Test Point 3	June 24, 2009	0.070
Vacuum Test Point 4	June 24, 2009	0.080
Vacuum Test Point 5	June 24, 2009	0.037
Vacuum Test Point 6	June 24, 2009	0.002
Vacuum Test Point 7	June 24, 2009	0.089
Suction Point North	June 24, 2009	1.10
Suction Point South	June 24, 2009	1.50
Suction Point East	June 24, 2009	1.60

Q:\Sundquist, Jon\Figure 2\FIGURE 2.dwg 9/17/08



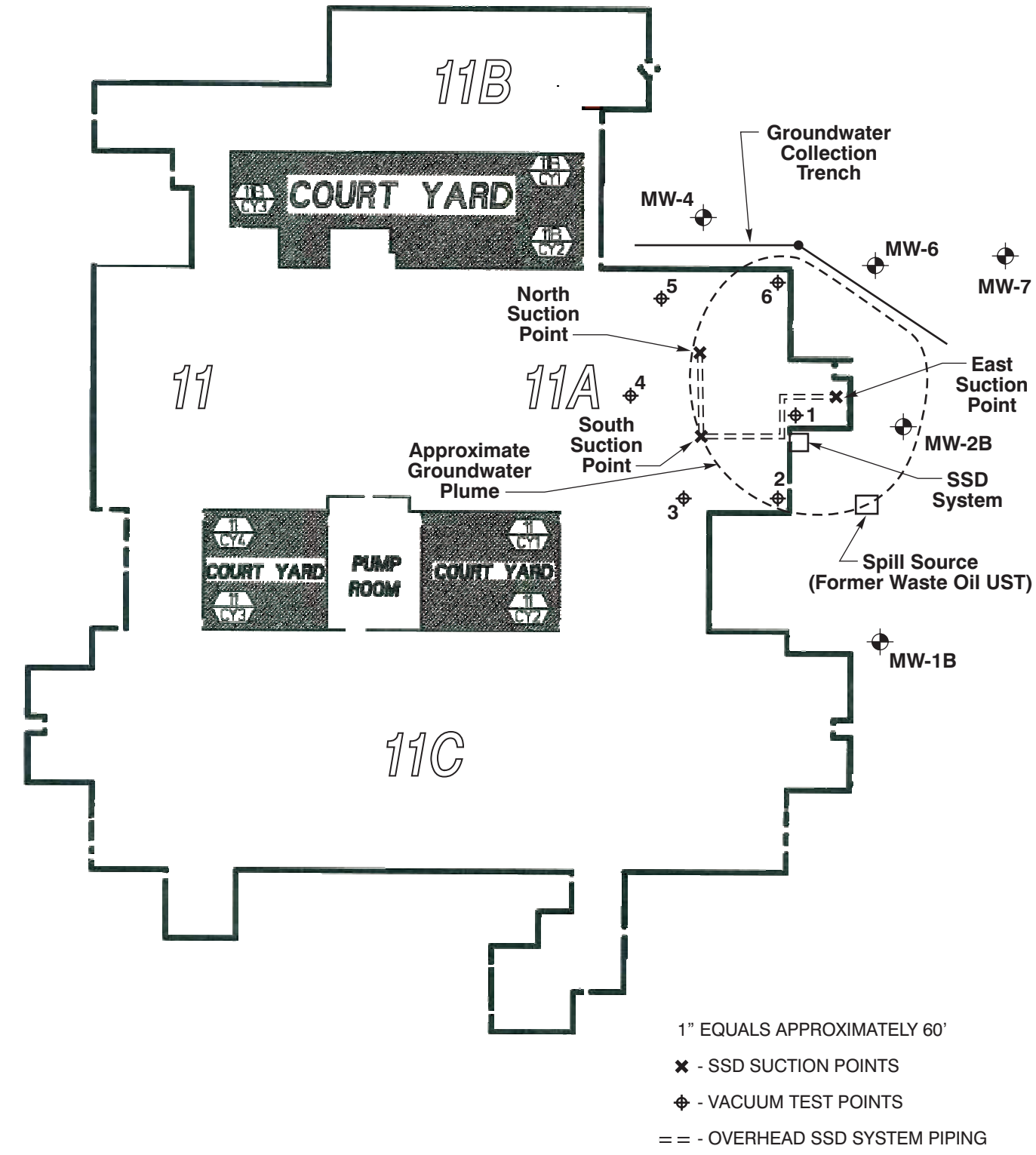
NOT TO SCALE

FIGURE 2

URS

MOOG, INC., SSD SYSTEM INSTALLATIONS
TYPICAL DEPRESSURIZATION VENT AND EXHAUST PIPING

FIGURE 1



URS

MOOG, INC.
LOCATIONS OF SSD SYSTEM
SUCTION POINTS AND VACUUM TEST POINTS

FIGURE 2

AG20125A-11175481-071709-GCM