Attachment 11
Environmental Monitoring Programs

FORM EQP 5111 ATTACHMENT B5
ENVIRONMENTAL MONITORING PROGRAMS

This document is an attachment to the Michigan Department of Environmental Quality's (MDEQ) Form EQP 5111, Construction Permit and Operating License Applications, Hazardous Waste Treatment Storage and Disposal Facilities. See the instructions for Form EQP 5111 for details on how to use this attachment. All references to Title 40 of the Code of Federal Regulations (40 CFR) citations specified herein are adopted by reference in R 299.11003.

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9611 establishes requirements for the environmental monitoring programs for hazardous waste management facilities. Owners and operators of hazardous waste treatment, storage, or disposal facilities must develop an environmental monitoring program capable of detecting a release of hazardous waste or hazardous waste constituents from the facility to groundwater, air, or soil.

This license application attachment addresses requirements for an environmental monitoring program for hazardous waste management units and the hazardous waste management facility for the Petro-Chem Processing Group of Nortru, LLC ("PCPG" or "Facility") facility in Detroit, Michigan. The attachment describes the PCPG environmental monitoring programs and a waiver from the monitoring requirements in accordance with R 299.9611(3)(a) and (b) and R 299.9611(4) is not being requested, with the exception of a waiver for the annual soil monitoring program.

Groundwater Monitoring Program (Check as appropriate)

[XI R 299.9612 compliance monitoring program and sampling and analysis plan for one or more units
☐ Waiver for one or more units

Ambient Air Monitoring Program (Check as appropriate)

☒ Monitoring program and sampling and analysis plan

☐ Waiver

Annual Soil Monitoring Program (Check as appropriate)

☐ Monitoring program and sampling and analysis plan

☒ Waiver

All samples collected for environmental monitoring will be collected, transported, analyzed, stored, and disposed by trained and qualified individuals in accordance with the PCPG quality assurancelquality control (QAIQC) Plan. The QAIQC Plan should at a minimum include the written procedures outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition, Chapter I (November 1986), and its Updates. A copy of the PCPG QA/QC Plan can be provided to the MDEQ if requested.

This attachment is organized as follows:

B5.A GROUNDWATER MONITORING PROGRAM

[R 299.9611(2)(b) and (3), R 299.9612, and R 299.9629 and 40 CFR, Part 264, Subpart F, except 40 CFR §§264.94(a)(2) and (3), (b), and (c), 264.100, and 264.1011

This section describes the facility's unit-specific groundwater monitoring program as outlined in Table B5.A.1. The basis for determining the groundwater monitoring program for each unit described below is provided in Attachment B3, Hydrogeological Report, attached separately to this application, which was prepared in accordance with R 299.9506.

B5.A.1 Unit-Specific Groundwater Monitoring Program

Table B5.A.1 Groundwater Monitoring Program

Unit	Name of Unit Subject to Monitoring[1]	Conditional Non-LDF Waiver[2]	No Migration Waiver[3]	Detection Monitoring[4]	Compliance Monitoring[5]	Corrective Action Monitoring[6]
1	Entire Facility	N/A	N/A	N/A	N/A	Yes

Under the direction of the MDEQ, PCPG will no longer conduct groundwater sampling in a detection monitoring program. MDEQ has indicated that PCPG will be required to conduct groundwater sampling through a Corrective Acton groundwater monitoring program.

PCPG currently operates and maintains a groundwater monitoring system consisting of ten monitoring wells labeled MW-1 through MW-10 as shown on Figure B5, attached as Appendix B5.1. The parameters and frequency of the sampling and analysis portion of the Groundwater Monitoring Program are provided in Section B5.A.3(a).

B5.A.2 Groundwater Monitoring Program Waiver
[R 299.9611(3)]

PCPG is not seeking a waiver of the groundwater monitoring requirements.

B5.A.3 General Groundwater Monitoring Requirements
[R 299.9612 and 40 CFR §§264.97 and 264.91(b)]

The PCPG facility will comply with the requirements for a groundwater monitoring program by implementing the program described in this section. This program was developed to satisfy the requirements of R 299.9612 and R 299.9629 and 40 CFR $5264.98 and 264.99, except 40 CFR §§264.94(a)(2) and (3) and 264.94(b) and (c). The basis for determining the groundwater monitoring program for each unit is provided in Attachment B3, Hydrogeologic Report, of this application that was prepared in accordance with R 299.9506.

The Facility samples and analyzes the groundwater collected from the monitoring wells in conformance with applicable MDEQ procedures including scheduling, indicator parameters, and analytical procedures as specified in Section B5.A.3(a).

B5.A.3(a) Sampling and Analysis Plan
[R 299.9611(2)(a)]

A summary of the sampling and analysis plan for groundwater monitoring at the PCPG facility is presented below. The sampling and analysis plan was prepared in accordance with the requirements specified in R 299.9611(2)(a). All sampling and analysis performed pursuant to this application will be consistent with the MDEQ Environmental Resource Management Division's *Quality Assurance Quality Control Manual for the Sampling and Analysis of Environmental Media Plan* (QA/QC Plan). All samples for the purpose of environmental monitoring will be collected, transported, stored, and disposed by trained and qualified individuals.

Groundwater sampling will include collecting and analyzing groundwater samples from the ten (10) existing groundwater monitoring wells. The samples will be collected utilizing low-flow sampling techniques.

The following procedures will be utilized during sampling activities:

- Measure static water levels (to the nearest 0.01-foot) in each of the monitoring wells utilizing a conductivity sensor well probe. Measurements will be collected from the top of the casing (fixed datum). The elevation of the static water level will be calculated by subtracting the distance from the fixed datum to the static water level from the elevation of the fixed datum.

  Decontamination of the measuring equipment will be conducted to prevent cross-contamination between each monitoring well. Decontamination will include a solution of potable water and Alconox.

Purge the monitoring wells using low-flow purging methods (e.g., using a Horiba D-25 purge pump). It is anticipated that low-flow purging flow rates will be on the order of 0.1 to 0.5 liters per minute (L/min).

- Collect groundwater samples using low-flow sampling methods after each wells indicator parameters (e.g., temperature, pH, and dissolved oxygen, etc.) stabilize during low-flow purging. Field-measured, secondary parameter (pH and Specific Conductance) data will be collected at this time.

  Many of the monitoring wells do not yield sufficient groundwater to allow for the stabilization of indicator parameters. When this occurs, the monitoring well will be pumped dry and allowed to recover prior to sampling. Sampling will be conducted on the same day, if there is sufficient recovery; otherwise, the wells will be allowed to recover overnight prior to sampling. Decontamination of the low-flow sampling equipment will be conducted to prevent cross-contamination between each monitoring well.

  Groundwater samples will be placed into 40-mL glass containers and field preserved with hydrochloric acid. Two containers will be filled for each monitoring well, and will contain no headspace or air bubbles.

  Groundwater samples for SVOCs and petroleum distillates will be placed into 1-L amber glass containers.

  Samples collected for analysis will be stored in the field on ice. Appropriate chain-of-custody (COC) documentation will be maintained for the samples. COC documentation will include the sample number, date and time of collection, location, number of containers, requested analyses, and sample handling sequence. Trip blanks will be prepared and follow the samples for appropriate QNQC documentation. A (blind) duplicate sample and field or equipment blank will also be collected for analysis. A copy of the laboratory QNQC package and the sampling SOPs are provided in Appendix B5.2.

- Analyze groundwater samples for VOCs, SVOCs and petroleum distillates in accordance with the protocols set forth EPA *SW-846 - Test Methods for Evaluating Solid Waste* and in accordance with Table 1 of Operation Memo GEN-8, Revision 8.

  Appropriate QNQC documentation will be provided with each batch of samples. Quality control replicates, laboratory spikes, and control blanks will be analyzed according to standard protocols and in accordance with RRD Operational Memorandum No. 2, Attachments 4 *(Sample Preservation, Sample Handling, and Holding Time Specifications)* and *6 (Sampling Methods for Volatile Organic Compounds).*

  Purge and sampling water collected from the wells will be containerized in a DOT-approved 55-gallon drum and stored onsite for proper disposal,

The sampling and analysis plan will meet the requirements included in Waste and Hazardous Materials Division, *Quality Assurance and Quality Control Manual for Sampling and Analysis of Environmenfal Media,* Revision *4,* dated September 15, 2009

B5.A.3(b) Description of Wells

[R 299.9612 and 40 CFR §264.97(a), (b), and (c)]

The monitoring well network was originally installed at the Facility in 1982; however, some wells have been damaged and relocated, and the well network has expanded. The current monitoring network is shown in Figure B5 and consists of 10 wells, Monitoring Wells MW-1 through MW-10. Monitoring Well MW-4 has historically been considered the upgradient well with the remaining wells being compliance wells.

The two-inch-diameter monitoring wells range in depths from 11 to 14 feet below ground surface (bgs) and are constructed with galvanized well casing. The well screens are three feet in length and are stainless steel, with iron core. A bentonite grout extends from the ground surface to the top of the well screen. A gravel pack is located beneath the bentonite grout to the final depths of the wells.

The monitoring wells have protective barriers, are clearly labeled, and are securely capped and locked when not in use.

The depth to groundwater is 5-11 feet bgs. Refer to Attachment B3, Hydrogeological Report for additional information.

B5.A.3(c) Procedure for Establishing Background Quality

[R 299.9612 and 40 CFR §264.97(a)(1) and (g)]

Background has previously been established for the majority of primary parameters identified at concentrations exceeding method detection limits. However, additional primary parameters were added to the list of analytes in 2009. Therefore, background will be established for those parameters following the completion of six sampling events. Following six consecutive sampling events, the mean background values, variance, and standard deviations for each parameter will be calculated.

B5.A.3(d) Statistical Procedures

[R 299.9612 and 40 CFR §§264.97(h) and 264.97(i)(1), (5), and (6)]

Statistical analysis will be performed utilizing the Mann-Kendall non-parametric statistical test. The Mann-Kendall test is used to assess trends in groundwater concentration data. The test compares the most recent groundwater quality datum with the results of earlier rounds. If the most recent concentration is larger than earlier rounds, a score of +1 is assigned. If the most recent concentration is smaller than earlier rounds, a score of -1 is assigned. The total score for the series of data is the Mann-Kendall statistic. The statistic is compared to a critical value to determine if the trend is increasing, decreasing, or if no trend can be determined.

B5.A.4 Detection Monitoring Program
[R 299.9612 and 40 CFR §§264.91(a)(4) and 264.98]

Detection groundwater monitoring is not required at the Facility at this time, as MDEQ will require that a corrective action groundwater monitoring program be commenced.

B5.A.5 Compliance Monitoring Program

Compliance groundwater monitoring is not required at the Facility at this time, as MDEQ will require that a corrective action groundwater monitoring program be commenced.

B5.B AMBIENT AIR MONITORING PROGRAM
[R 299.9611(2)(c) and (4)]

B5.B.1 Sampling and Analysis Plan
[R 299.9611(2)(a)]

A sampling and analysis plan for ambient air monitoring for PCPG facility is summarized below. The sampling and analysis plan was prepared in accordance with the requirements specified in R 299.9611(2)(a). All sampling and analysis performed pursuant to this application will be consistent with the DEQ Environmental Resource Management Division's Quality Assurance Quality Control Manual for the Sampling and Analysis of Environmental Media Plan (QNQC Plan). All samples for the purpose of environmental monitoring will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QNQC Plan.

The PCPG facility currently conducts ambient air monitoring to detect violations of the provisions of Part 55 of Act 451.

PCPG completes ambient air monitoring following their Ambient Monitoring Network Plan originally developed in November 1999 and updated in September 2011. The updated Ambient Monitoring Network Plan has been submitted separately from this form. The Ambient Monitoring Network Plan describes PCPG's sampling methodology, sampling locations, sampling schedule, analysis conducted, QNQC, recordkeeping documents, schedule of monitoring, data evaluation, inspection schedule and suitable response procedures if a non-compliance is detected.

Additionally, as required, the following are included in the Ambient Monitoring Network Plan. A summary of each of the sections follows:

(1) Sampling locations. Four monitoring locations have been selected and approved by the MDEQ. They are located on the northern, eastern, southern and western edges of the property. In addition the sampling is conducted 2 to 4 meters (6 to 13 feet) above ground level.

(2) Constituents to be monitored and frequency of monitoring. The following table is a list of the analytes reported in the program:

COMPOUND
Benzene
Carbon Tetrachloride
Chloroform
Methylene Chloride
Tetrachloroethene
Trichloroethene
Vinyl Chloride
1,1,1-Trichloroethane
Toluene
Xylene

An eight-hour composite sample is taken over a twenty-four hour period (one minute on, and two minutes off) using low flow sampling pumps. Compounds are sampled every 6 days.

(3) Procedures to maintain integrity of monitorinn devices. Monitoring is conducted by PCPG. The monitoring devices are services at regular intervals and calibrated prior to each sampling event. Devices may also be supplied by a third part (subcontractor). The subcontractor is responsible to maintain the integrity of their monitoring devices. PCPG verifies that device integrity is intact by collecting a field blank and field duplicate. Additionally, laboratory QNQC, including a laboratory spike, is completed in accordance with EPA Method TO-17.

(4) Sample collection and preservation. Sampling is performed in accordance to EPA Method TO-17, Method for the Determination of Volatile Organic Compounds in Ambient Air using Active Sampling onto sorbent tubes (make: Perkin Elmer glass sorbent tubes, model: Automatic Thermo Desorbers, Type: Carbopack C, Carbopack B, Carboxen 1000).

(5) Analytical methods. Analysis is performed in accordance to EPA Method TO-17, Method for the Determination of Volatile Organic Compounds in Ambient Air using Active Sampling onto sorbent tubes.

(6) Applicable procedures for evaluation and revaluation of data. Evaluation: Collection of an accurately known volume of air is critical to the accuracy of the results; therefore flow rate calibrations will be made for each sampling train prior to, and after each sample collection. In addition, the following QNQC samples will be collected; (1) Field Blank – During each sampling event, one clean sorbent tube will accompany the samples to the field and back to the laboratory without being used for sampling, and (2) Field Duplicate – At one location during each sampling event, a parallel sample will be drawn to insure the reproducibility of the sampling methods. Parallel samples should be within approximately 25% of one another. If not, subsequent sampling events should have modified flow rates and sampling intervals
In addition, laboratory QNQC will be in accordance with EPA Method TO-17 that includes a laboratory spike.

Revaluation: Laboratory data will be evaluated and reviewed for compliance with the proper QA/QC procedures. Including; (1) proper sample handling (strict chain-of-custody documentation), (2) field blank analysis and results, (3) field duplicate analysis and results to determine if results are within 25% of each other, and (4) laboratory spike data.

(7) Appropriate response procedures. PCPG will review analytical data for compliance with ambient air monitoring limits. If analytical data results or current site conditions are found to be a non-compliance that poses a danger to human health or the environment, PCPG will notify MDEQ immediately of the non-compliance.

PCPG will notify MDEQ of all other non-compliance issues within 30 days or during the normal monthly reporting period, which ever is sooner.

B5.C ANNUAL SOIL MONITORING PROGRAM
[R 299.9611(2)(d) and (4)]

B5.C.I Sampling and Analysis Plan
[R 299.9611(2)(a)]

PCPG is requesting a waiver from the soil monitoring requirements of R 299.9611(2)(d). PCPG was granted a waiver from soil monitoring requirements as part of the previous permit. There have been no significant changes to the facility, in regard to engineering controls in place, facility procedures and geological conditions. The majority of the facility's footprint is concrete covered, including all loading and unloading areas. A gravel parking area is used as a staging area for vehicles, no transfer or long term storage is utilized in this area. Soils under the facility are a mixture of fill with underlying layers of thick dense natural clays which provide a naturally low permeability barrier to fluid movement.

Refer to Attachment B3, Hydrogeological Report for additional information regarding geology at the site.

Volatile Organic Compounds Analyte List

Petro-Chem Processing Group of Nortru, LLC
Detroit, Michigan

1,2,3-Trimethylbenzene
Cyclohexane
Diisopropyl ether
Ethyl tert-Butyl ether
Hexachloroethane
tert-Amylmethyl ether
tert-Butyl alcohol
Diethyl ether
Iodomethane
trans-1,4-Dichloro-2-butene
Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon Disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
1,2-Dibromo-3-chloropropane
Dibromochloromethane
1,2-Dibromoethane
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone

Volatile Organic Compounds Analyte List

Petro-Chem Processing Group of Nortru, LLC
Detroit, Michigan

Isopropylbenzene
4-Isopropyltoluene
2-Methylnapthalene
4-Methyl-2-Pentanone
Methyl tert-butyl ether (MtBE)
Methylene Chloride
Naphthalene
n-Propylbenzene
Styrene
1,1,2,2-Tetrachloroethane
1,1,1,2-Tetrachloroethane
Tetrachloroethene
Tetrahydrofuran
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl Chloride
o-Xylene
m,p-Xylene

Semi-Volatile Organic Compounds Analyte List

Petro-Chem Processing Group of Nortru, LLC
Detroit, Michigan

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
2-Chloronaphthalene
2-Chlorophenol
2-Methylnaphthalene
2-Methylphenol
2-Nitroaniline
2-Nitrophenol
3-Nitroaniline
4,6-Dinitro-2-methylphenol
4-Bromophenyl phenyl ether
4-Chloro-3-methylphenol
4-Chlorophenyl phenyl ether
4-Methylphenol & 3-Methylphenol
4-Nitroaniline
4-Nitrophenol
Acenaphthene
Acenaphthylene
Anthracene
Azobenzene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
Bis(2-ethylhexyl)phthalate
Butyl benzyl phthalate
Carbazole
Chrysene
Dibenzo(a,h)anthracene
Dibenzofuran
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene

Semi-volatile Organic Compounds Analyte List

Petro-Chem Processing Group of Nortru, LLC
Detroit, Michigan

Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene
1,2-Dichlorobenzene-d4
2,4,6-Tribromophenol
2-Chlorophenol-d4
2-Fluorobiphenyl
2-Fluorophenol
4-Terphenyl-d14
Nitrobenzene-d5
Phenol-d5

Ambient Monitoring Network Plan

Prepared for:

Petro-Chem Processing Group of Nortru, LLC

Site ID No. MID 980 615 298

421 Lycaste Street
Detroit, Michigan

Bureau Veritas Project Number: 11010-000175.00.002

October 2011

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1.0 INTRODUCTION

At the request of Petro-Chem Processing Group of Nortru, LLC. (PCPG), Bureau Veritas prepared this work plan to conduct an ambient air monitoring network for the PCPG plant located at 421 Lycaste in Detroit, Michigan. Four locations will be monitored for a select list of volatile organic compounds (VOCs) in the program. The network will be monitored continually in conjunction with the requirements of the Part B Hazardous Waste Operating License. PCPG will provide a written request for decreased monitoring requirements at a future date based on monitoring results.

The following sections detail PCPG's technical approach for conducting the requested ambient air monitoring.

2.0 AMBIENT AIR MONITORING

The following subsections detail the sampling methodology, sampling locations and frequency of sampling to be implemented in the monitoring network.

2.1 SAMPLING METHODOLOGY

Sampling will be performed in accordance to EPA Method TO-17, Method for the Determination of Volatile Organic Compounds in Ambient Air using Active Sampling onto sorbent tubes (make: Perkin Elmer glass sorbent tubes, model: Automatic Thermo Desorbers, Type: Carbopack C, Carbopack B, Carboxen 1000). A copy of this method in included in Appendix A.

Ambient air is drawn through a sorbent packing and certain VOCs are trapped on the adsorbent media while highly volatile organic compounds and most inorganic atmospheric constituents pass through the packing. The sorbent tubes are transferred to a laboratory for analysis.

Samples will be collected by drawing a known volume of air through the media using a calibrated flow pump. Precautions to minimize breakthrough and obtain a completeness of objective of 85% will be taken. Based on literature information, a combination tube and an air volume of approximately 4 liters will be used.

An eight-hour composite sample will be taken over a twenty-four hour period (one minute on, and two minutes off) using low flow sampling pumps.

A data sheet will be maintained an each sampling location that contains the following information:

- Sampling location;
- Sample collection start time;
- Flow rate calibration data;
- Flow rate;
- Cartridge number; and

- Serial number,

The following meteorological data will be obtained from Detroit City airport throughout the sampling effort:

- Ambient temperature;
- Wind Speed;
- Wind Direction;
- Barometric Pressure; and
- Relative humidity.

2.2 SAMPLE LOCATIONS

Four monitoring locations have been selected in accordance with 40 CFR 58 and "Design Criteria for Source Specific Non-Criteria Ambient Air Monitoring Networks for Act 64 Activities (November 9, 1987)". These four locations have been agreed to with the Michigan Department of Environmental Quality (MDEQ). A site diagram showing the locations of the ambient air sampling stations is provided in the attached Figure – Detroit Monitoring Stations. A description of each of these locations is as follows:

- Site #1 – Located at the northern extreme of the PCPG complex just inside the existing fence line;
- Site #2 – Located south of the laboratory at the eastern edge of the site;
- Site #3 – Located at the southern edge of the site, approximately one hundred feet west of the main processing building; and
- Site #4 – Located along the western edge of the site at St. Jean Street, approximately one hundred sixty feet north of Freud Street.

All sampling locations are within the PCPG fence line; however, they will be considered representative of ambient air in the proximity of the complex. In addition, sampling is conducted at 2 to 4 meters (6 to 13 feet) above ground level.

2.3 SAMPLING SCHEDULE

A sample will be collected from each location every sixth day.

Once a year of valid data is collected, PCPG will evaluate the results and a reduction in sampling may be requested. Note that MDEQ defines "valid data" as being 75% complete and having laboratory QA/QC data that is acceptable to MDEQ, Air Quality Division (AQD).

2.4 INSPECTION SCHEDULE

PCPG will inspect equipment associated with the ambient air monitoring procedures (e.g., pumps, tubing, sorbet tubes, etc.) on a regular basis and prior to sampling to ensure it is in good working order. All areas of the facility will be inspected in relation to the ambient air network every sixth day, during sampling.

In addition, air pumps are serviced at regular intervals and calibrated prior to each sampling event.

3.0 ANALYSIS

Analysis will be performed in accordance with EPA Method TO-17. The following subsections present a general description of the analytical methodology, the analyte list and associated detection limits, and project specific quality assurance/quality control requirements.

3.1 SAMPLING METHODOLOGY

The sorbent tube (make: Perkin Elmer glass sorbent tubes, model: Automatic Thermo Desorbers, Type: Carbopack C, Carbopack B, Carboxen 1000) is initially dry purged with dry, inert gas before analysis to remove water vapor and air. The tube then undergoes thermal desorption with analyte refocusing on a secondary trap. The trap next undergoes rapid desorption and injection/transfer of the target analytes into a gas chromatograph. Compounds are separated by high-resolution capillary gas chromatography. Specific analytes are quantified using mass spectrometry.

3.2 ANALYTES

The following table is a list of the analytes to be reported in the program along with the required detection limits:

COMPOUND	DETECTION LIMIT ($\mu g/m^3$)
Benzene	0.05
Carbon Tetrachloride	0.01
Chloroform	0.01
Methylene Chloride	0.03
Tetrachloroethene	0.05
Trichloroethene	0.02
Vinyl Chloride	0.01
1,1,1-Trichloroethane	1.5
Toluene	1.0
Xylene	1.0

3.3 QUALITY ASSURANCE/QUALITY CONTROL

Collection of an accurately known volume of air is critical to the accuracy of the results; therefore, flow rate calibrations will be made for each sampling train prior to, and after each sample collection. In addition, the following QA/QC samples will be collected:

- Field Blank – During each sampling event, one clean sorbent tube will accompany the samples to the field and back to the laboratory without being used for sampling; and

- Field Duplicate – At one location during each sampling event, a parallel sample will be drawn to insure the reproducibility of the sampling methods. Parallel samples should be within approximately 25% of one another. If not, subsequent sampling events should have modified flow rates and sampling intervals.

Laboratory QA/QC will be in accordance with EPA Method TO-17 that includes a laboratory spike.

In addition, PCPG has the air pumps services at regular intervals and calibrated before each sampling event.

4.0 DOCUMENTATION AND DATA EVALUATION

PCPG will receive and review analytical results from each sampling event from the third party laboratory.

Laboratory data will be reviewed for compliance with the proper QA/QC procedures. Including; (1) proper sample handling (strict chain-of-custody documentation), (2) field blank analysis and results, (3) field duplicate analysis and results to determine if results are within 25% of each other, and (4) laboratory spike data.

PCPG will monitor and record weather and site condition data as related to the ambient air sampling.

PCPG will continue to use the existing excel spreadsheets for data input and interpretation. Once the data has been input into the excel spreadsheet it will be reviewed for compliance with limits as specified by MDEQ.

Written reports will be submitted to MDEQ Air Monitoring Unit within thirty (30) days of the end of each month that the data was collected. Results will be submitted to MDEQ electronically via email.

Each report will be submitted in an agreed upon format and include the following information:

- Results of all samples collected;
- QA/QC data;
  Lab blank data;
  Field and field calibration data; and
- Meteorological data.

Meteorological data will be obtained from Detroit City Airport (located four miles north of the site) and will be considered representative of meteorological conditions at the site. If ambient air monitoring data indicate emission levels are of a magnitude to effect health and welfare of the community, a micro-meteorological station will be installed on site to more accurately access emissions.

5.0 RESPONSE PROCEDURES

PCPG will review analytical data for compliance with ambient air monitoring limits. If analytical data results or current site conditions are found to be a non-compliance that poses a danger to human health or the environment, PCPG will notify MDEQ immediately of the non-compliance.

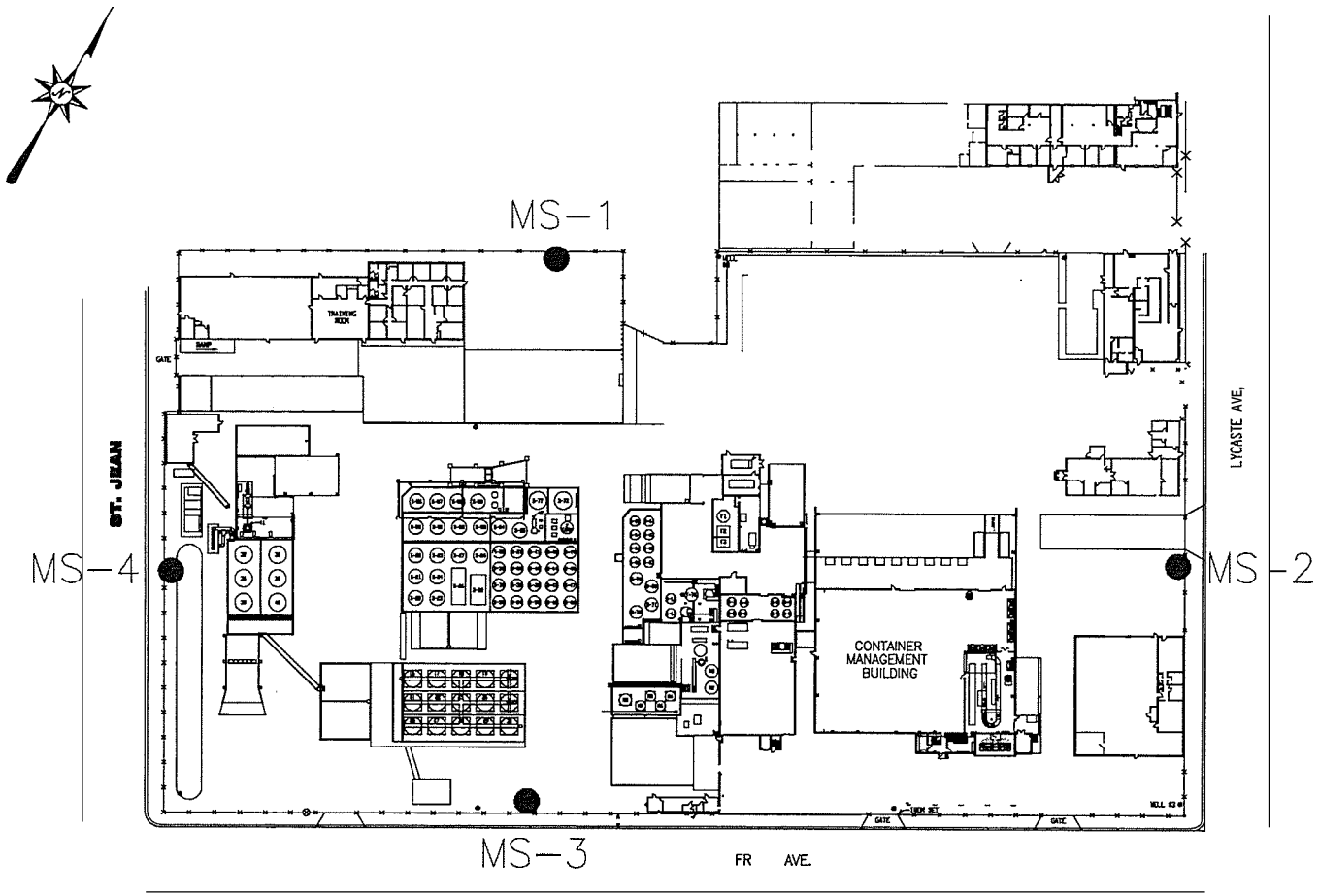
PCPG will notify MDEQ of all other non-compliance issues within 30 days or during the normal monthly reporting period, which ever is sooner.

6.0 SCHEDULE

PCPG will continue sampling each of the four parameter locations every sixth day. Once a year of valid data is collected, PCPG will evaluate the results and a reduction in sampling may be requested.

FIGURE

Detroit Monitoring Stations



LEGEND

MS-3 — MONITORING STATION NUMBER

PSC	09/26/11 DETROIT MONITORING STATIONS DRAWN BY: LEWIS KNYK	098