Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

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June 10, 2016

Nicole Leja
Eurofins Spectrum Analytical, Inc.
11 Almgren Drive
Agawam, MA 01001

RE: Agawam
Transmittal No.: X260292
Application No.: WE-14-007
Class: *SUBMIN*
FMF No.: 178729
AIR QUALITY PLAN APPROVAL

Conditional Approval

Dear Ms. Leja:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed operation of an existing semi-volatile organic compound (SVOC) extraction and concentration process, SVOC glassware cleaning operation, instrumentation syringe cleaning operation and metals department at your facility located at 11 Almgren Drive in Agawam, Massachusetts ("Facility"). The Application bears the seal and signature of Suzanne L. Pisano, Massachusetts Registered Professional Engineer Number 42455.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

DESCRIPTION OF FACILITY AND APPLICATION

Eurofins Spectrum Analytical, Inc., operates an existing laboratory which consists of a series of analytical laboratories used in the analysis of air, water and soil samples as well as petroleum products. The facility has submitted a Non-Major Comprehensive Plan Application (NMCPA) #WE-14-007 to construct and operate an existing semi-volatile organic compound (SVOC) sample extraction and concentration process, SVOC glassware cleaning operation, instrumentation syringe cleaning operation and metals department. The facility currently does not have any existing plan approvals.

The facility also operates a wet chemistry, microbiology, treatability and forensics laboratory, air laboratory and a volatile organic analysis laboratory. Any air contaminant emissions that might be emitted from these operations are negligible so that these labs are not subject to the plan approval requirements specified in 310 CMR 7.02.

Semi-Volatile Organic Compound (SVOC) Extraction and Concentration Process
The existing SVOC sample extraction process performs extractions on water, soil and solid material samples using extraction methods developed by the USEPA and state agencies. The extraction methods include separatory funnel liquid-liquid extraction, solid-phase extraction, pressurized fluid extraction, microwave extraction and ultrasonic extraction. The solvents used in the extraction methods consist of a single solvent, such as methylene chloride (DCM), or a combination of solvents including acetone, methanol, ethyl ether and hexane. There are no volatile organic compounds (VOCs), hazardous air pollutants (HAPs) or acetone emissions, other than minor fugitive emissions from sample transfers, from the SVOC extraction process.

Once a sample has been extracted, the resultant volume is currently transferred to one of six Biotage TurboVap II Concentration Workstations (TurboVaps) which are equipped with six tubes for sample processing and are located in the SVOC Sample Preparation Room under three lab hoods, two units per hood. The TurboVaps are used to concentrate the sample to a final volume. During this concentration, the solvents are evaporated, uncontrolled, until the desired final volume is achieved. However, the facility is proposing to replace the TurboVaps with a concentrator that utilizes a condenser type of control device that is capable of controlling the concentration process emissions and obtaining 100% capture based on EPA Method 204 – 40 CFR Part 51 Appendix M and a removal efficiency of 95% each for DCM, VOCs and acetone. At the time of this approval, the specific control device and exact number of control devices has not been finalized but the facility is considering the Thermo Fisher Scientific Rocket Evaporator and the Organomation S-EVAP-KD solvent evaporator for Kuderna Danish Flasks.

Air contaminant emissions from the concentration process using a control device, as referenced in Table 6 of the plan approval application, will consist of no more than 0.93 tons per year of DCM, .99 tons per year of total HAPs (DCM, methanol and hexane), 0.09 tons per year of acetone and 0.06 tons per year of VOCs (methanol, ethyl ether and hexane). These emissions were conservatively based on sample projections with a maximum solvent loss (from Table C-1 of the plan approval application) of 37,350 pounds per year of DCM, 248 pounds per year of

ethyl ether, 3,622 pounds per year of acetone, 13 pounds per year of methanol, 2,087 pounds per year of hexane with a capture efficiency of 100% and a minimum removal efficiency of 95%. The emissions from the control device(s) will be exhausted through Stack ID STROBIC. Due to current renovations at the facility, the STROBIC stack may not be installed until April 1, 2017

Semi-Volatile Organic Compound Glassware Cleaning Operation
The existing glassware cleaning operations at the facility include the manual washing or rinsing of glassware used in the SVOC extraction/concentration process within laboratory hoods of the SVOC preparation room. The cleaning is done within a laboratory hood and involves rinsing and pre-washing the glassware after a sample is analyzed and pre-rinsing the glassware before it is used for another sample and other various uses. The cleaning solvent, which is acetone or a mixture of acetone and hexane (50% acetone/50% hexane), is applied to a cleaning brush or squirted into the glassware. No DCM is used for glassware cleaning. The remaining solvent is collected in a container and then transferred to a hazardous waste container. There are no pollution control devices proposed for this operation.

After the glassware has been rinsed and prewashed, it is placed into a Miele industrial glass washer or a soaking bath if the glassware has been determined to be unsuitable for washing in the Miele washer. The soaking baths and Miele washer use detergents which do not contain any VOCs, HAPs or acetone. The glassware that is cleaned in a soaking bath is either oven or air-dried. If any glassware pieces that have frits or non-volumetric pieces do not come clean in the soaking bath, they are placed in a glassware kiln to be baked.

Air contaminant emissions from glassware cleaning will consist of no more than 0.15 tons per year of hexane and 0.28 tons per year of acetone. These emissions were based on sample projections with a maximum solvent loss of 305 pounds per year of hexane and 562 pounds per year of acetone. The emissions from the glassware cleaning will be exhausted through Stack ID STROBIC.

Instrumentation Syringe Cleaning Operation
Syringe cleaning is conducted in the instrument room where samples that have been extracted / concentrated (vials) are analyzed. The solvents used in the cleaning process, which consist of DCM, iso-octane, and/or hexane, are dependent on the type of analysis that was conducted. The syringes are cleaned using an automated process. During the automated cleaning process, virgin solvent is drawn from a sealed solvent storage container into the syringe. Once the virgin solvent is drawn into the syringe and the cleaning cycle is completed, the waste cleaning solvent is injected into a sealed waste vial through a septum in its cap. The waste vials are on a turntable apparatus that holds and rotates the waste vials to be processed one at a time. The solvent in the waste vial is then poured into a sealed satellite waste container. There are no pollution control devices proposed for this operation.

Air contaminant emissions from the syringe cleaning operation will consist of no more than 0.010 tons per year of DCM, 0.0006 tons per year of iso-octane and 0.0006 tons per year of hexane. These emissions were conservatively based on 100 percent of the solvents used in the

cleaning process being emitted. The emissions from the syringe cleaning operation will be exhausted through Stack ID D.

Metals Department
The metals department uses an Inductively Coupled Plasma (ICP) to measure trace metals in a variety of solutions. ICP uses a sample of acidified digestate which is drawn through a straw and atomized into the plasma for elemental analysis. The majority of the sample is drawn up through the straw and collected in a liquid waste container. The exhaust of the ICP is vented through the roof to dissipate heat and remove any corrosive vapors or toxic fumes from the samples being combusted in the plasma. The samples contain hydrochloric acid (HCl), which is a HAP, as well as nitric acid. Due to the evaporation of samples during sample preparation and analysis, there are HAP emissions. There are no pollution control devices proposed for this operation.

The typical annual air contaminant emission rate from the metals department of 0.1 tons per year was based on the facility's following assumptions: 2 milliliters (ml) of nitric acid and 5 ml of HCl added to a 100 ml sample of water, an hourly emission rate of 0.1977 pounds per hour of HCl, 48 beakers processed per hour and 50,000 beakers processed per year. To allow for growth and fluctuations, the facility has proposed to limit the amount of beakers processed to 75,000 per year. If 100 percent of the HCl (5 ml) contained in each sample were emitted from 75,000 beakers per year, the emission rate would be 0.42 tons per year of HCl.

Best Available Control Technology Analysis
The SVOC concentration process, glassware cleaning operation, instrumentation syringe cleaning operation and metals department are subject to and must satisfy the best available control technology (BACT) requirements of 310 CMR 7.02(8)(a)2.

Semi-Volatile Organic Compound (SVOC) Concentration Process
The Permittee has proposed that the SVOC concentration process will comply with the BACT requirements contained in 310 CMR 7.02(8)(a)2.a. by using a condenser type of pollution control device which will achieve 100% capture and a minimum removal efficiency of 95% for each of the following pollutants: VOCs, HAPs and acetone. The facility has yet to finalize the specific type of condenser and the number of condenser units.

The facility initially considered using a Horizon Technology DryVap Concentrator System which includes a Horizon Technology Reclaimer Solvent Recovery System (SRS) and/or a Thermo Fisher Scientific Rocket Evaporator. However, the facility submitted a revision to their application on December 17, 2015, which stated that they were considering the Thermo Fisher Scientific Rocket Evaporator and the Organomation S-EVAP-KD solvent evaporator for Kuderna Danish Flasks.

Emission data was provided for the rocket evaporator to show that it is capable of achieving a minimum removal efficiency of 95% for DCM but no emission data was provided regarding VOCs or acetone. The facility also mentioned that the rocket evaporator may not be capable of

achieving a 95% removal efficiency for ethyl ether. The facility stated that further testing is needed to evaluate this option.

No emission data was provided for the removal efficiencies of DCM, VOCs or acetone from the Organomation S-EVAP-KD solvent evaporator. The supporting manufacturer data stated that the Organomation unit is capable of achieving a 97% solvent recovery. However, the manufacturer data did not specify the pollutants to which the solvent recovery efficiency applies. The facility stated that further testing is needed to evaluate this option.

At this time, MassDEP considers 100% capture and a minimum 95% removal efficiency for VOCs, HAPs and acetone to be representative of BACT for this category of source based on the recent MassDEP Plan Approval's SE-15-018 and CE-15-015 which were both issued on October 7, 2015, Plan Approval #CE-14-013 issued January 20, 2015 and Plan Approval #WE-14-020 issued May 29, 2015. Each of these plan approvals are for laboratories which conduct similar, if not identical, concentration procedures compared to Eurofins Spectrum Analytical, Inc. In addition, each of these facilities are equipped with pollution control devices which are currently installed, operational and have demonstrated compliance with BACT.

Since the Permittee and MassDEP must further evaluate the proposed control options to determine if they satisfy BACT, the Permittee will have until August 31, 2016, to test and install the pollution control device or devices for compliance with BACT. In addition, the Permittee will submit a Non-Major Comprehensive Plan Approval by no later than August 31, 2016, for the installation of the selected pollution control device or devices which demonstrates compliance with the BACT requirements of 310 CMR 7.02(8)2.a.

The maximum amount of solvent to be evaporated and controlled by the selected pollution control device or devices will be 37,350 pounds per year of DCM, 248 pounds per year of ethyl ether, 3,622 pounds per year of acetone, 13 pounds per year of methanol and 2,087 pounds per year of hexane.

The abovementioned restrictions for the SVOC concentration processes will result in maximum emission rate of 0.93 tons per year of DCM, 0.99 tons per year of total HAPs (DCM, methanol and hexane), 0.09 tons per year of acetone and 0.06 tons per year of VOCs (methanol, ethyl ether and hexane).

The facility will also implement pollution prevention and best management practices concerning the storage, conveying and handling of VOCs, HAPs and acetone for the purposes of minimizing evaporation losses to the atmosphere.

Semi-Volatile Organic Compound Glassware Cleaning Operations
To satisfy the BACT requirements for the glassware cleaning operation, the Permittee has proposed a combination of best management practices, pollution prevention and a limitation on raw material usage, in accordance with 310 CMR 7.02(8)(a)2.b., which is in lieu of an emission-unit-specific top-down BACT analysis. Based on the information contained in the application

and supplemental submittals, BACT will consist of a limit on the amount of VOCs, HAPs and acetone being evaporated to atmosphere which will be no more than 305 pounds per year of hexane and 562 pounds per year of acetone. No DCM will be used for glassware cleaning. These restrictions will result in a maximum emission rate of 0.15 tons per year of hexane and 0.28 tons per year of acetone from the glassware cleaning operation.

In addition, the Permittee will implement several pollution prevention and best management practices to reduce fugitive emissions from the cleaning operations. These practices will include:

- Using washing techniques which do not require the use of VOC, HAP and acetone-containing materials when possible, such as soap solutions and oven baking.
- Using fine tip squirt bottles when applying VOC, HAP and acetone-containing materials to the glassware to control the amount of material used.
- Storing all VOC, HAP and acetone-containing materials in closed containers with properly fitted lids.
- Keeping all containers of VOC, HAP and acetone-containing materials closed at all times except when materials are being deposited or removed from the container.
- Using Eco Funnels, or similar devices, on receiving vessels for VOC, HAP and acetone-containing materials.

Instrumentation Syringe Cleaning Operation
To satisfy the BACT requirements for the instrumentation syringe cleaning operation, the Permittee has proposed a combination of best management practices, pollution prevention and a limitation on raw material usage, in accordance with 310 CMR 7.02(8)(a)2.b., which is in lieu of an emission-unit-specific top-down BACT analysis.

BACT for the syringe cleaning operation will consist of no more than 0.010 tons per year of DCM, 0.0006 tons per year of iso-octane and 0.0006 tons per year of hexane. In addition, the syringe cleaning operation will be automated to apply the precise amount of solvent for cleaning. The waste solvent will be injected into containers with sealable septa caps.

The facility will also implement pollution prevention and best management practices concerning the storage, conveying and handling of VOCs and HAPs for the purposes of minimizing evaporation losses to the atmosphere.

Metals Department
To satisfy the BACT requirements for the metals department, the Permittee has proposed a combination of best management practices, pollution prevention and a limitation on raw material usage, in accordance with 310 CMR 7.02(8)(a)2.b., which is in lieu of an emission-unit-specific top-down BACT analysis.

Due to difficulties of tracking and demonstrating compliance with an emission rate of 0.1977 pounds of HCl per hour, as proposed by the facility, MassDEP has determined that BACT will consist of a maximum usage of 5 milliliters HCl per sample and a maximum of 75,000 samples

processed per year. These restrictions will result in a maximum emission rate of 0.42 tons per year of HCl.

The facility will also implement pollution prevention and best management practices concerning the storage, conveying and handling of VOCs and HAPs for the purposes of minimizing evaporation losses to the atmosphere.

Regulatory Applicability

In addition to the semi-volatile organic compound (SVOC) sample concentration process, SVOC glassware cleaning operation, instrumentation syringe cleaning operation, and metals department being subject to the BACT requirements of 310 CMR 7.02(8)(a)2. , the facility is subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10. There are no New Source Performance Standards (40 CFR Part 60) or National Emission Standards for Hazardous Air Pollutants (40 CFR Part 63) which apply to this source.

Ambient Air Quality Impact Analysis

MassDEP has reviewed the air quality dispersion modeling report that was included as part of Application WE-14-007. The AERMOD air quality dispersion modeling report demonstrates that the combined impacts from the SVOC concentration process, SVOC glassware cleaning operation and instrumentation syringe cleaning operation, when operated in accordance with this Plan Approval, will not cause an exceedance of the current annual Allowable Ambient Limit (AAL) and the 24-hour Threshold Effects Exposure Limit (TEL) guideline values for methylene chloride, hexane, iso-octane, methanol and acetone.

Type of Model

The air quality modeling analysis was performed with the latest version (14134) of the USEPA AERMOD with USEPA's recommended regulatory default options and rural dispersion coefficients. AERMOD was set up to predict 24-hour and annual average concentrations of methylene chloride, hexane, iso-octane, methanol and acetone in units of ug/m^3.

Meteorological Data

The air quality modeling analysis used five years (2009-2013) of sequential surface observations from Bradley International Airport, Windsor Locks, Connecticut along with 5 years of concurrent upper air meteorological data from Albany International Airport, NY. This data was considered to be the most representative for the facility's dispersion environment. One-minute ASOS data processing was utilized with AERMINUTE version 14237 to reduce the number of calm wind hours. AERSURFACE version 13106 was used to determine the surface characteristics and roughness length of the area in twelve 30- degree sectors out to 1 kilometer. AERSURFACE was also used to determine Bowen ratio and albedo based on average characteristics over a 10 by 10 km square centered on the meteorological data collection site in accordance with EPA's AERSURFACE User's Guide (revised January 2013).

Selected Air Quality Monitors
Background air quality concentrations of methylene chloride or the other compounds were not added to model-predicted concentrations because no monitoring data was available to use in the analysis. This is acceptable practice for this type of air toxic modeling analysis.

Receptor Network
A nested Cartesian coordinate (i.e., rectangular) receptor grid was used with receptor spacing of 20 meters out to 400 meters, 50 meters out to 1 km, 100 meters out to 1.5 km, 200 meters out to 2 km, and 500 meters out to 4 km. The spacing and horizontal extent of this receptor array was more than adequate for this modeling analysis.

Property line receptors spaced at 20 meters were used. The actual boundary used for these receptors was actually pulled in from the property line a bit given that there is no fence preventing public access. Roadways form the boundary to the north and east, while parking lots for adjacent businesses form the boundary to the south and west.

Air Dispersion Modeling Results
Tables 3-1 and 3-2 of the modeling report show that the methylene chloride, acetone, alkanes (hexane and iso-octane) and methanol modeling results comply with the applicable MassDEP TEL/AALs. The modeling results represent the combined impact from the two stacks (Stack ID STROBIC and D) for the SVOC concentration processes, SVOC glassware cleaning operation and instrumentation syringe cleaning operation. The emissions from the SVOC concentration processes include the use of control devices. The modeling results are provided in the table below.

Averaging Period	Pollutant	Facility Impact (ug/m^3)	TEL/AAL Guideline (ug/m^3)	Percent of TEL/AAL
24-hour (TEL)	Methylene Chloride	63.73	100.0	63.7%
Annual (AAL)		3.936	60.0	6.6%
24-hour (TEL)	Acetone	19.29	160.54	12%
Annual (AAL)		1.569	160.54	1%
24-hour (TEL)	Alkanes	10.65	95.24	11.2%
Annual (AAL)		0.875	47.62	1.8%
24-hour (TEL)	Methanol	0.017	7.13	0.2%
Annual (AAL)		0.0014	7.13	0.02%

Therefore, the SVOC concentration processes (with controls), SVOC glassware cleaning operation and instrumentation syringe cleaning operation, as approved, will neither cause nor contribute to a condition of air pollution with respect to methylene chloride, acetone, alkanes and methanol emissions.

1. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Design Capacity	Pollution Control Device (PCD)
1	Semi-Volatile Organic Compound Concentration Processes	NA	To Be Determined
2	Semi-Volatile Organic Compound Glassware Cleaning Operation	NA	NA
3	Instrumentation Syringe Cleaning Operation	NA	NA
4	Metals Department	NA	NA

Table 1 Key:

EU = Emission Unit Number PCD = Pollution Control Device

2. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2a

EU	Operational / Production Limit	Air Contaminant	Emission Limit
1	1. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., the total amount of VOCs, HAPs and acetone being controlled by the pollution control device(s) shall not exceed: • 37,350 pounds of DCM in any 12 consecutive month period • 7,470 pounds of DCM in any calendar month • 248 pounds of ethyl ether in any 12 consecutive month period • 49.6 pounds of ethyl ether in any calendar month • 3,622 pounds of acetone in any 12 consecutive month period • 724.4 pounds of acetone in any calendar month • 2,087 pounds of hexane in any 12 consecutive month period • 417.4 pounds of hexane in any calendar month • 13 pounds of methanol in any 12 consecutive month period • 2.6 pounds of methanol in any calendar month No other VOCs or HAPs shall be used in EU 1.	VOC	0.06 TPY and 0.012 TPM
	2. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2.,subsequent to the installation and operation of the pollution control device(s), all samples shall be concentrated using a pollution control device.	HAP (Single)	0.93 TPY and 0.19 TPM
	3. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., each pollution control device shall have a capture efficiency of no less than 100%.	HAP (Total)	0.99 TPY and 0.20 TPM
	4. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., each pollution control device shall have a minimum overall control efficiency of 95% for each of the following pollutants: VOCs, HAPs and acetone.		
	5. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., prior to the installation and operation of the pollution control device(s), EU 1 shall comply with the monthly VOC, HAP(single), HAP (Total) and acetone emission limits specified herein.	acetone	0.09 TPY and 0.02 TPM

Table 2b

EU	Operational / Production Limit	Air Contaminant	Emission Limit
2	6. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., the amount of hexane and acetone being used[1] in EU 2 shall not exceed: • 305 pounds of hexane in any 12 consecutive month period • 562 pounds of acetone in any 12 consecutive month period No other VOCs or HAPs shall be used in EU 2.	VOC	0.15 TPY
		HAP (Single)	0.15 TPY
		HAP (Total)	0.15 TPY
		acetone	0.28 TPY
	7. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., no VOCs or HAPs shall be used in the soaking baths or in the industrial glassware washer.		
3	8. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., the amount of DCM, iso-octane and hexane being used[1] in EU 3 shall not exceed: • 19.26 pounds of DCM in any 12 consecutive month period • 1.17 pounds of iso-octane in any 12 consecutive month period • 1.22 pounds of hexane in any 12 consecutive month period No other VOCs or HAPs shall be used in EU 3.	VOC	0.001 TPY
		HAP (Single)	0.010 TPY
		HAP (Total)	0.011 TPY
4	9. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., no more than 75,000 samples shall be processed in any 12 consecutive month period.	HAP (Single)	0.42 TPY
		HAP (Total)	0.42 TPY
	10. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., no more than 5 milliliters of hydrochloric acid per sample shall be used[1] in EU 4. No other VOCs or HAPs shall be used in EU 4.		

Table 2 Key:
EU = Emission Unit Number
VOC = Volatile Organic Compounds
HAP (single) = maximum single Hazardous Air Pollutant
HAP (total) = total Hazardous Air Pollutants.
TPM = tons per month
TPY = tons per consecutive12-month period
DCM = methylene chloride
CMR = Code of Massachusetts Regulations
≤ = less than or equal to

Table 2 Notes

1. The amount of VOC, HAP and acetone used means the amount of that particular material that is evaporated to atmosphere. Any material recovered from the applicable EU in liquid form need not be counted toward the usage limitation provided 1) the amount and identity of the recovered material is recorded and 2) it is 100% DCM, 100% hexane, 100% ethyl ether, 100% methanol, 100% iso-octane, 100% acetone or 100% hydrochloric acid.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3

EU	Monitoring and Testing Requirements
1	1. By no later than August 31, 2016, the Permittee shall test each installed pollution control device to demonstrate the compliance status with the requirements specified in Table 2a, condition #3 and #4 herein.
Facility-wide	2. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration
	3. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

Table 3 Key:
EU = Emission Unit Number
CMR = Code of Massachusetts Regulations
MassDEP = Massachusetts Department of Environmental Protection

Table 4	
EU	**Recordkeeping Requirements**
1	1. The Permittee shall keep a record of the date on which each pollution control device commences operation at the facility. The record shall also include the make and model # of each installed pollution control device.
	2. The Permittee shall maintain comprehensive and accurate records of the testing as required by Table 3 herein. The record shall include the date the test was performed and the overall control efficiency for each pollutant and each unit.
Facility -wide	3. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	4. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	5. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	6. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	7. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	8. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	9. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	10. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:
EU = Emission Unit Number
CMR = Code of Massachusetts Regulations
PCD = Pollution Control Device
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency

Table 5

EU	Reporting Requirements
1	1. By no later than June 30, 2016, the Permittee shall submit to MassDEP, in writing, a proposed test protocol for the installed pollution control device or devices for approval by MassDEP. The test protocol shall be designed to determine the compliance status with the overall control efficiency requirements in Table 2a herein. The test protocol must be sufficiently detailed such that the overall control efficiency test is reproducible each time the test is performed by any operator.
	2. The Permittee shall notify MassDEP, in writing, the date on which each pollution control device commences operation at the facility. The notice shall contain the make and model # of the installed pollution control device with supporting documentation which includes design features, operating parameters and the monitoring frequency of the operating parameters. A hard copy of this notice, not an email, shall be provided to MassDEP within (5) days of commencing operation.
	3. The Permittee shall submit to MassDEP the results of the overall control testing performed on each control device within 30 calendar days after completing the testing.
1 2	4. The Permittee shall notify MassDEP, in writing, the date on which the STROBIC stack is installed for EU 1 and EU 2. The notice shall contain the stack height above ground (feet), the stack inside exit dimensions (inches), the stack gas exit velocity range (feet per second) and the stack gas exit temperature range (Fahrenheit). A hard copy of this notice, not an email, shall be provided to MassDEP within (5) days of installing the stack.
Facility-wide	5. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	6. The Permittee shall notify the Western Regional Office of MassDEP, BAW Compliance & Enforcement Chief by telephone: 413-755-2131, email: saadi.motamedi@state.ma.us, or fax 413-784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Compliance& Enforcement Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	7. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.

Table 5 Key:
EU = Emission Unit Number
MassDEP = Massachusetts Department of Environmental Protection
CMR = Code of Massachusetts Regulations
BAW = Bureau of Air and Waste

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6a

EU	Special Terms and Conditions
1	1. By no later than August 31, 2016, the Permittee shall install a pollution control device or devices which complies with the requirements specified in Table 2a, condition #3 and #4 herein.
	2. By no later than August 31, 2016, the uncontrolled Biotage TurboVap II Concentration Workstations (TurboVaps) shall be removed from EU 1.
	3. Any pollution control device which is tested according to the test protocol and does not comply with the overall control efficiency limits contained in Table 2a herein shall not be commercially operated until the equipment is retested and demonstrates compliance with the overall control efficiency limits contained in Table 2a herein.
	4. The Permittee shall submit to MassDEP a Non-Major Comprehensive Plan Application (NMCPA) by no later than August 31, 2016, for the permanent installation of the selected pollution control device or devices which demonstrates compliance with Table 2a, condition #3 and #4 herein as well as the BACT requirements of 310 CMR 7.02(8)2.a. The NMCPA shall contain the results for the pollution control device(s) compliance test which was required to be conducted pursuant to Table 3, condition #1 herein. In addition, the NMCPA shall contain a detailed description of the control device or devices which includes, but is not limited to, the manufacturer and model # of each control device, the specific number of each control device that will be installed at the facility, the specific control device operating parameters and their monitoring frequency, as well as a description of any alarms, visible and/or audible, that will notify the operator if the control device is not operating correctly.
	5. If the Permittee has not installed a pollution control device or devices which complies with the requirements specified in Table 2a, condition #3 and #4 herein or has not submitted a Non-Major Comprehensive Plan Application (NMCPA) for the permanent installation of the selected pollution control device or devices by August 31, 2016, EU 1 shall cease operation until the pollution control devices are installed and the NMCPA has been submitted to MassDEP.
2	6. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., during the cleaning of glassware, the Permittee shall comply with the following work practices: a. Use washing techniques which do not require the use of VOC, HAP and/or acetone- containing materials when possible, such as soap solutions and oven baking; b. Perform cleaning without atomizing the VOC, HAP and/or acetone- containing materials; c. Ensure that all spent cleaning material is captured in closed containers; d. Use fine tip squirt bottles when applying VOC, HAP and/or acetone-containing materials to the glassware; and, e. Use Eco Funnels, or other similar type of device which minimizes evaporative loses, on receiving vessels for VOC, HAP and/or acetone-containing materials.
1 2	7. The STROBIC stack shall be installed by no later than April 1, 2017.
3	8. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., EU 3 shall be equipped with an automated system which applies the precise amount of solvent for cleaning each syringe.

Table 6b	
EU	**Special Terms and Conditions**
3	9. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., the waste solvent generated from EU 3 shall be injected into containers with sealable septa caps.
Facility -wide	10. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2., the Permittee shall comply with the following work practices: a. store all VOC, HAP and/or acetone-containing materials in closed containers; b. ensure that mixing and storage containers used for VOC, HAP and/or acetone-containing materials are kept closed at all times except when depositing or removing these materials; c. minimize spills of VOC, HAP and/or acetone-containing materials; d. convey VOC, HAP and/or acetone-containing materials from one location to another in closed containers or pipes; e. store and dispose of all absorbent materials, such as cloth or paper, that are contaminated with VOC, HAP and/or acetone-containing materials in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container.

Table 6 Key:
EU = Emission Unit Number
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutant

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (inches)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (^{o}F)**
1, 2 (Stack ID STROBIC)	27.26	18	52.4	67.6
3 (Stack ID D)	20.5	10	31	66.3
4 (Stack ID 26)	17.25	25	6	67.6

Table 7 Key:
EU = Emission Unit Number
^{o}F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Cortney Danneker by telephone at 413-755-2234, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Marc Simpson
Air Quality Permit Chief
Bureau of Air and Waste

cc: WERO AQ plan file
WERO AQ approval file

ecc: MassDEP/Boston - Yi Tian
MassDEP/WERO – Peter Czapienski