

Engineering Evaluation  
Lyten  
145 Baytech  
San Jose, CA, 95134  
Facility No. 24188  
Application No. 683974

Project Description: Pilot Plant for [REDACTED] Reactors for Carbon  
Products Manufacturing

**BACKGROUND**

Lyten Inc. (Lyten) has applied to obtain Authorities to Construct and Permits to Operate for the following equipment:

**S-4 Reactor #1**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-1 Cyclone**

**A-2 Filter**

**A-3 Condenser**

**A-4 Adsorber**

**S-5 Reactor #2**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-5 Cyclone**

**A-6 Filter**

**A-7 Condenser**

**A-8 Adsorber**

**S-6 Reactor #3**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-9 Cyclone**

**A-10 Filter**

**A-11 Condenser**

**A-12 Adsorber**

**S-7 Reactor #4**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-13 Cyclone  
A-14 Filter  
A-15 Condenser  
A-16 Adsorber**

**S-8 Reactor #5  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-17 Cyclone  
A-18 Filter  
A-19 Condenser  
A-20 Adsorber**

**S-9 Reactor #6  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-21 Cyclone  
A-22 Filter  
A-23 Condenser  
A-24 Adsorber**

**S-10 Reactor #7  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-25 Cyclone  
A-26 Filter  
A-27 Condenser  
A-28 Adsorber**

**S-11 Reactor #8  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-29 Cyclone  
A-30 Filter  
A-31 Condenser  
A-32 Adsorber**

**S-12 Reactor #9  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-33 Cyclone  
A-34 Filter  
A-35 Condenser  
A-36 Adsorber**

**S-13 Reactor #10  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-37 Cyclone  
A-38 Filter  
A-39 Condenser  
A-40 Adsorber**

**S-14 Reactor #11  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber**

**S-15 Reactor #12  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

- A-45 Cyclone**
- A-46 Filter**
- A-47 Condenser**
- A-48 Adsorber**

- S-16 Reactor #13**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-49 Cyclone**
- A-50 Filter**
- A-51 Condenser**
- A-52 Adsorber**

- S-17 Reactor #14**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-53 Cyclone**
- A-54 Filter**
- A-55 Condenser**
- A-56 Adsorber**

- S-18 Reactor #15**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-1 Cyclone**
- A-2 Filter**
- A-3 Condenser**
- A-4 Adsorber**

- S-19 Reactor #16**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-5 Cyclone**
- A-6 Filter**
- A-7 Condenser**
- A-8 Adsorber**

**S-20 Reactor #17  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-9 Cyclone**
- A-10 Filter**
- A-11 Condenser**
- A-12 Adsorber**

**S-21 Reactor #18  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-13 Cyclone**
- A-14 Filter**
- A-15 Condenser**
- A-16 Adsorber**

**S-22 Reactor #19  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-17 Cyclone**
- A-18 Filter**
- A-19 Condenser**
- A-20 Adsorber**

**S-23 Reactor #20  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-21 Cyclone**
- A-22 Filter**
- A-23 Condenser**
- A-24 Adsorber**

**S-24 Reactor #21  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-25 Cyclone**
- A-26 Filter**
- A-27 Condenser**
- A-28 Adsorber**

**S-25 Reactor #22  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-29 Cyclone**
- A-30 Filter**
- A-31 Condenser**
- A-32 Adsorber**

**S-26 Reactor #23  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-33 Cyclone**
- A-34 Filter**
- A-35 Condenser**
- A-36 Adsorber**

**S-27 Reactor #24  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-37 Cyclone**

**A-38 Filter  
A-39 Condenser  
A-40 Adsorber**

**S-28 Reactor #25  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber**

**S-29 Reactor #26  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-45 Cyclone  
A-46 Filter  
A-47 Condenser  
A-48 Adsorber**

**S-30 Reactor #27  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-49 Cyclone  
A-50 Filter  
A-51 Condenser  
A-52 Adsorber**

**S-31 Reactor #28  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-53 Cyclone  
A-54 Filter**

**A-55 Condenser  
A-56 Adsorber**

**S-32 Reactor #29  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber**

**S-33 Reactor #30  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-45 Cyclone  
A-46 Filter  
A-47 Condenser  
A-48 Adsorber**

**S-34 Reactor #31  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-49 Cyclone  
A-50 Filter  
A-51 Condenser  
A-52 Adsorber**

**S-35 Reactor #32  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-53 Cyclone  
A-54 Filter  
A-55 Condenser**



**A-56 Adsorber**

**S-36 Reactor #33**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-41 Cyclone**

**A-42 Filter**

**A-43 Condenser**

**A-44 Adsorber**

**S-37 Reactor #34**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-45 Cyclone**

**A-46 Filter**

**A-47 Condenser**

**A-48 Adsorber**

**S-38 Reactor #35**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-49 Cyclone**

**A-50 Filter**

**A-51 Condenser**

**A-52 Adsorber**

**S-39 Reactor #36**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-53 Cyclone**

**A-54 Filter**

**A-55 Condenser**

**A-56 Adsorber**

**S-40 Solvent Cleaning (Wipe Cleaning)**

Up to 50 gallons per calendar year of solvent usage.

Lyten is proposing to install and operate 36 carbon reactors and a solvent cleaning operation at a pilot plant facility located at 145 Baytech San Jose, CA, 95134. [REDACTED]

The expected regulated air pollutants associated with the project are precursor organic compounds (POC), non-precursor organic compounds (NPOC), particulate matter, and toxic air contaminants.

**EMISSIONS SUMMARY**

The [REDACTED] reaction [REDACTED] to carbon-based products is expected to produce a variety of NPOC's, POCs, and toxic air contaminants (TAC's). Lyten has conducted experimental testing to measure the concentrations of common organic compounds, [REDACTED]

Lyten will be required to conduct Air District-approved source tests to certify the emissions and obtain emission factors. [REDACTED]

[REDACTED] Additionally, the higher concentration from the two test methods, TO-15 and EPA-18 was used. This ensures the emissions estimates reflect the worst-case scenario, for every pollutant and every TAC, and for each reactor regardless of reaction type. Most of the compounds measured by the two tests yielded non-detect results, below the concentration threshold needed for a reading. In these cases, the value that was used was one half the lowest measurable concentration of the test.



would yield a methane emission rate of 2.64 pounds per hour.

POC and NPOC emissions were each calculated by summing the total emissions from all the POC and NPOC compounds measured by the source test data. The exception is methane (considered an NPOC per Section 2-1-207) which was determined using the methodology described above, in place of source test data.

Using this methodology, Lyten would need to limit operation [redacted] per reactor to achieve a mass emission rate of 9.0 pounds per day per reactor.

In addition to the aforementioned reactors, Lyten will have a solvent cleaning operation at the facility consisting of 50 gallons of acetone usage per year. Acetone is an NPOC and the facility will be conditionally limited to 9.0 lbs of emissions per day.

The following table provides a summary of pollutant emission rates associated with the reactors at the maximum natural gas flow rate and natural gas flow rate that the facility will be limited to ensure emissions do not exceed 9.0 pounds per day. For further information, please reference Appendix A. *“Project Emissions Review for New Source Review Application”* (Appendix A).

<b>Table 1. Regulated Air Pollutant Rate Summary for Each Reactor, Sources 4 to 39</b>				
<b>Pollutant</b>	<b>Hourly Emission Rate (lbs./hour)</b>	<b>Daily Emission Rate (lbs./day)</b>	<b>Annual Emission Rate (lbs./year)</b>	<b>Annual Emission Rate (tons/year)</b>
POC	0.03	0.0	9	0.005
NPOC	2.87	9.0	3285	1.643

The following table provides the summary of pollutant emission rates associated with the solvent cleaning operation.

<b>Table 2. Regulated Air Pollutant Rate Summary for Solvent Wipe Cleaning Operation</b>				
<b>Pollutant</b>	<b>Hourly Emission Rate<sup>1</sup> (lbs./hour)</b>	<b>Daily Emission Rate (lbs./day)</b>	<b>Annual Emission Rate<sup>2</sup> (lbs./year)</b>	<b>Annual Emission Rate<sup>2</sup> (tons/year)</b>
POC/NPOC	9.00	9.0	330	0.165

<sup>1</sup>Max daily emissions are assumed to occur within a 1-hour period.

<sup>2</sup>Annual emission rate is based on 50 gallons of acetone usage per year. The facility will be provided the flexibility to use POC as well.

The table below shows the maximum hourly emission rates of TACs for a single reactor and the project hourly emissions, which includes the emissions of 36 [redacted] reactors as well as an

<sup>1</sup> Source: [https://www.pge.com/pipeline/operations/gas\\_quality/index.page](https://www.pge.com/pipeline/operations/gas_quality/index.page)

existing emergency engine source, S-1. The hourly emission rates were calculated assuming that the operation could reach the daily throughput limitation within an hour. The only TAC the emergency engine will emit is diesel particulate matter, which is included in the table below. Emissions from the solvent cleaning operation S-40, were not included in the table below as acetone is not a TAC.

<b>Table 3. Acute Toxic Air Contaminant Emission Rate Summary for Sources S-1 and S-4 to S-39</b>					
<b>Pollutant</b>	<b>CAS #</b>	<b>Single Reactor Hourly Emission Rate (lbs./hour)</b>	<b>Project Hourly Emission Rate (lbs./hour)</b>	<b>Reg. 2-5 Acute Trigger Level (lbs./hour)</b>	<b>Exceeds Reg. 2-5 Acute Trigger Level?</b>
1,1,1-Trichloroethane (methyl chloroform)	71-55-6	1.6E-05	5.8E-04	3.0E+01	No
1,1,2,2-Tetrachloroethane (tetrachloroethane)	79-34-5	1.3E-05	4.6E-04		N/A
1,1,2-Trichloroethane	79-00-5	9.6E-06	3.4E-04		N/A
1,1-Dichloroethane (ethylidene chloride)	75-34-3	9.4E-06	3.4E-04		N/A
1,1-Dichloroethene (vinylidene chloride)	75-35-4	1.8E-05	6.5E-04		N/A
1,2-Dibromoethane (ethylene dibromide)	106-93-4	9.6E-06	3.4E-04		N/A
1,2-Dichloroethane (ethylene dichloride)	107-06-2	5.2E-06	1.9E-04		N/A
1,3-Butadiene (butadiene)	106-99-0	1.7E-05	6.1E-04	2.9E-01	No
1,4-Dioxane (p-dioxane)	123-91-1	1.4E-05	5.0E-04	1.3E+00	No
2-Butanone (methyl ethyl ketone, MEK)	78-93-3	8.5E-06	3.1E-04	5.8E+00	No
2-Methoxy-2-methylpropane (methyl tert-butyl ether, MTBE)	1634-04-4	2.3E-05	8.3E-04		N/A
2-Propanol (isopropanol)	67-63-0	5.4E-06	1.9E-04	1.4E+00	No
2-Propenal (acrolein)	107-02-8	5.1E-06	1.8E-04	1.1E-03	No
2-Propenenitrile (acrylonitrile)	107-13-1	7.9E-06	2.9E-04		N/A
Allyl Chloride	107-05-1	7.5E-06	2.7E-04		N/A
Benzene	71-43-2	9.2E-06	3.3E-04	1.2E-02	No
Bromomethane (methyl bromide)	74-83-9	2.9E-05	1.1E-03	1.7E+00	No
Carbon disulfide (methanedithione)	75-15-0	1.5E-05	5.3E-04	2.7E+00	No
Carbon tetrachloride (tetrachloromethane)	56-23-5	1.1E-05	3.9E-04	8.4E-01	No
Chlorobenzene	108-90-7	6.2E-06	2.2E-04		N/A
Chloroethane (ethyl chloride)	75-00-3	1.2E-05	4.4E-04		N/A

Chloromethylbenzene (benzyl chloride)	100-44-7	1.7E-05	6.0E-04	1.1E-01	No
Ethenyl acetate (vinyl acetate)	108-05-4	1.0E-05	3.7E-04		N/A
Ethylbenzene	100-41-4	4.3E-06	1.5E-04		N/A
Ethylene oxide	75-21-8	8.3E-06	3.0E-04		N/A
Hexane	110-54-3	3.6E-05	1.3E-03		N/A
Methanol (methyl alcohol)	67-56-1	2.0E-05	7.4E-04	1.2E+01	No
m-Xylene (1,3-xylene)	108-38-3	1.2E-05	4.5E-04	9.7E+00	No
Naphthalene (naphthene)	91-20-3	1.0E-05	3.7E-04		N/A
o-Xylene (1,2-xylene)	95-47-6	1.4E-05	5.1E-04	9.7E+00	No
p-Dichlorobenzene (1,4-dichlorobenzene)	106-46-7	2.1E-04	7.4E-03		N/A
Propene (propylene)	115-07-1	2.0E-05	7.4E-04		N/A
p-Xylene (1,4-xylene)	106-42-3	1.0E-05	3.6E-04	9.7E+00	No
Styrene (vinylbenzene)	100-42-5	8.9E-06	3.2E-04	9.3E+00	No
Tetrachloroethene (perchloroethylene)	127-18-4	1.2E-05	4.1E-04	8.8E+00	No
Toluene (methylbenzene)	108-88-3	1.6E-05	5.8E-04	2.2E+00	No
Trichloromethane (chloroform)	67-66-3	1.3E-05	4.6E-04	6.6E-02	No
<b>S-1 Acute Toxic Air Contaminant Emission Rate Summary</b>					
<b>Pollutant</b>	<b>CAS #</b>	<b>S-1 Hourly Emission Rate<sup>1</sup> (lbs./hour)</b>	<b>Project Hourly Emission Rate (lbs./hour)</b>	<b>Reg. 2-5 Acute Trigger Level (lbs./hour)</b>	<b>Exceeds Reg. 2-5 Acute Trigger Level?</b>
Diesel Particulate Matter		1.0E-01	N/A <sup>2</sup>		N/A

Similar to the table above, Tables 4 shows the annual emission rates of TACs for a single reactor and the project annual emissions, which includes the emissions of the 36 [REDACTED] reactors as well as the existing emergency engine source, S-1. The only TAC the emergency engine source will emit is diesel particulate matter. The solvent cleaning source, S-40, is not included in the table below, as its only pollutant, acetone, is not considered a TAC.

<b>Table 4. Chronic Toxic Air Contaminant Emission Rate Summary for Sources 4 to 39</b>					
<b>Pollutant</b>	<b>CAS #</b>	<b>Single Reactor Annual Emission Rate (lbs./year)</b>	<b>Project Annual Emission Rate (lbs./year)</b>	<b>Reg. 2-5 Chronic Trigger Level (lbs./year)</b>	<b>Exceeds Reg. 2-5 Chronic Trigger Level?</b>
1,1,1-Trichloroethane (methyl chloroform)	71-55-6	5.9E-03	2.1E-01	3.9E+04	No
1,1,2,2-Tetrachloroethane (tetrachloroethane)	79-34-5	4.7E-03	1.7E-01	1.4E+00	No
1,1,2-Trichloroethane	79-00-5	3.5E-03	1.3E-01	5.0E+00	No

1,1-Dichloroethane (ethylidene chloride)	75-34-3	3.4E-03	1.2E-01	5.0E+01	No
1,1-Dichloroethene (vinylidene chloride)	75-35-4	6.6E-03	2.4E-01	2.7E+03	No
1,2-Dibromoethane (ethylene dibromide)	106-93-4	3.5E-03	1.3E-01	1.1E+00	No
1,2-Dichloroethane (ethylene dichloride)	107-06-2	1.9E-03	6.9E-02	4.0E+00	No
1,3-Butadiene (butadiene)	106-99-0	6.2E-03	2.2E-01	4.8E-01	No
1,4-Dioxane (p-dioxane)	123-91-1	5.1E-03	1.8E-01	1.1E+01	No
2-Butanone (methyl ethyl ketone, MEK)	78-93-3	3.1E-03	1.1E-01		N/A
2-Methoxy-2-methylpropane (methyl tert-butyl ether, MTBE)	1634-04-4	8.4E-03	3.0E-01	1.6E+02	No
2-Propanol (isopropanol)	67-63-0	2.0E-03	7.1E-02	2.7E+05	No
2-Propenal (acrolein)	107-02-8	1.9E-03	6.7E-02	1.4E+01	No
2-Propenenitrile (acrylonitrile)	107-13-1	2.9E-03	1.0E-01	2.9E-01	No
Allyl Chloride	107-05-1	2.8E-03	9.9E-02	1.4E+01	No
Benzene	71-43-2	3.3E-03	1.2E-01	2.9E+00	No
Bromomethane (methyl bromide)	74-83-9	1.1E-02	3.8E-01	1.9E+02	No
Carbon disulfide (methanedithione)	75-15-0	5.4E-03	2.0E-01	3.1E+04	No
Carbon tetrachloride (tetrachloromethane)	56-23-5	4.0E-03	1.4E-01	1.9E+00	No
Chlorobenzene	108-90-7	2.3E-03	8.2E-02	3.9E+04	No
Chloroethane (ethyl chloride)	75-00-3	4.5E-03	1.6E-01	1.2E+06	No
Chloromethylbenzene (benzyl chloride)	100-44-7	6.0E-03	2.2E-01	1.7E+00	No
Ethenyl acetate (vinyl acetate)	108-05-4	3.7E-03	1.3E-01	7.7E+03	No
Ethylbenzene	100-41-4	1.6E-03	5.6E-02	3.3E+01	No
Ethylene oxide	75-21-8	3.0E-03	1.1E-01	9.2E-01	No
Hexane	110-54-3	1.3E-02	4.8E-01	2.7E+05	No
Methanol (methyl alcohol)	67-56-1	7.5E-03	2.7E-01	1.5E+05	No
m-Xylene (1,3-xylene)	108-38-3	4.5E-03	1.6E-01	2.7E+04	No
Naphthalene (naphthene)	91-20-3	3.7E-03	1.3E-01	2.4E+00	No
o-Xylene (1,2-xylene)	95-47-6	5.2E-03	1.9E-01	2.7E+04	No
p-Dichlorobenzene (1,4-dichlorobenzene)	106-46-7	7.5E-02	2.7E+00	7.2E+00	No
Propene (propylene)	115-07-1	7.5E-03	2.7E-01	1.2E+05	No
p-Xylene (1,4-xylene)	106-42-3	3.7E-03	1.3E-01	2.7E+04	No
Styrene (vinylbenzene)	100-42-5	3.2E-03	1.2E-01	3.5E+04	No

Tetrachloroethene (perchloroethylene)	127-18-4	4.2E-03	1.5E-01	1.4E+01	No
Toluene (methylbenzene)	108-88-3	5.9E-03	2.1E-01	1.6E+04	No
Trichloromethane (chloroform)	67-66-3	4.7E-03	1.7E-01	1.5E+01	No
<b>S-1 Chronic Toxic Air Contaminant Emission Rate Summary</b>					
<b>Pollutant</b>	<b>CAS #</b>	<b>S-1 Annual Emission Rate (lbs./year)<sup>1</sup></b>	<b>Project Annual Emission Rate (lbs./year)</b>	<b>Reg. 2-5 Chronic Trigger Level (lbs./year)</b>	<b>Exceeds Reg. 2-5 Chronic Trigger Level?</b>
Diesel Particulate Matter		6.1E+00	N/A <sup>2</sup>	2.6E-01	N/A <sup>2</sup>

### **TOXIC RISK SCREENING ANALYSIS**

Pursuant to Regulation 2-5-110, a project shall not be subject to the requirements of Regulation 2-5, if the total project emissions, for each toxic air contaminant (TAC), are below the acute and chronic trigger levels listed in Table 2-5-1 of this regulation. A project includes all new or modified sources of TACs within a 5-year period unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that construction or modification of the sources included in the current application was neither (1) a reasonably foreseeable consequence of the previous project, nor (2) a critical element or integral part of the previous project.

This application is for the proposal of 36 reactors and 1 solvent wipe cleaning operation to support operations. An emergency engine, S-1, was previously permitted under AN 30583, within the last 5-year period. The emergency engine will power an emergency generator that may be employed to mitigate unforeseen loss of power events and prevent or reduce damage to life, health, and property. The operation of the emergency engine is not related to the proposed manufacturing of materials at the facility. Therefore, the emergency engine is neither a reasonably foreseeable consequence of the current project, nor a critical element or integral part of the current project. As such, the emergency engine will not be considered part of this project, which will only include the 36 reactors and 1 solvent wipe cleaning operation, for Regulation 2-5 purposes.

As shown in Tables 3 and 4, this project will not exceed the acute and chronic trigger levels of listed Table 2-5-1. Further, a permit condition will be imposed limiting TAC emissions from the project to below the acute and chronic risk thresholds of Regulation 2-5.

### **BEST AVAILABLE CONTROL TECHNOLOGY**

Pursuant to Regulation 2-2-301, BACT is required for any new or modified source with a potential to emit emission rate equal to or greater than 10 pounds per day for any District BACT pollutant as defined in Regulation 2-2-210. As shown in Tables 1 and 2 of the Emission Calculations Section, no source will have the potential to emit 10 or more pounds of any District BACT pollutant. The reactors will be conditionally limited in operational capacity to not exceed 9 pounds per day of any District BACT pollutant. The solvent wipe cleaning operation will be conditionally limited to 9 pounds per day of any District BACT Pollutant.

**OFFSETS**

Pursuant to Regulation 2-2-302, offsets must be provided for any un-offset cumulative increase at a facility that emits, or is permitted to emit, more than 10 tons per year of POC or nitrogen oxides (NO<sub>x</sub>). Pursuant to Regulation 2-2-303 offsets must be provided for any new or modified source at a major facility with a cumulative increase that exceeds 1.0 ton per year of particulate matter 10 microns in size (PM<sub>10</sub>), particulate matter 2.5 microns in size (PM<sub>2.5</sub>), or sulfur dioxide (SO<sub>2</sub>). For purposes of Regulation 2-2-303, a major facility is defined as a facility that is permitted to emit 100 tons/yr or more of PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>.

The following table provides a summary of the facility’s existing potential to emit; which was obtained from New Source Review (NSR) Application #30583. The table includes the new emissions from this application as well.

<b>Table 5. Facility Potential to Emit</b>			
<b>Pollutant</b>	<b>Existing Facility Emissions<sup>1</sup> (tons/year)</b>	<b>New Emissions Increase (tons/year)</b>	<b>New Facility Emissions (tons/year)</b>
POC	0.009	0.327	0.336
NO <sub>x</sub>	0.521	0.000	0.521
PM <sub>10</sub>	0.009	0.000	0.009
PM <sub>2.5</sub>	0.009	0.000	0.009
SO <sub>2</sub>	0.001	0.000	0.001
CO	0.155	0.000	0.155

<sup>1</sup>Emissions were obtained from NSR Application #30583.

The following table provides a summary of the facility’s Cumulative Increase; which was obtained from New Source Review (NSR) Application #30583. The table includes the new cumulative increase emissions from this application as well.

<b>Table 6. Facility Cumulative Increase</b>			
<b>Pollutant</b>	<b>Existing Facility Emissions<sup>1</sup> (tons/year)</b>	<b>New Emissions Increase (tons/year)</b>	<b>New Facility Emissions (tons/year)</b>
POC	0.003	0.327	0.330
NO <sub>x</sub>	0.174	0.000	0.174
PM <sub>10</sub>	0.003	0.000	0.003
PM <sub>2.5</sub>	0.003	0.000	0.003
SO <sub>2</sub>	0.000	0.000	0.000
CO	0.052	0.000	0.052

<sup>1</sup>Emissions were obtained from NSR Application #30583.

Table 5 shows the facility’s potential to emit is not expected to exceed an emission rate of more than 10 tons per year of NO<sub>x</sub> or POC.

Pursuant to Regulation 2-2-303, major facilities of PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub> are also required to provide offsets for any emission increases, from any new or modified source, that exceeds 1 ton



per year of PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>. Table 5 shows the facility is not expected to have a potential to emit more than 100 tons per year of PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>, and is not identified as a major facility of PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>. Thus, the requirements of Regulation 2-2-303 do not apply to the facility.

### **NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

This facility is not subject to any National Emission Standards for Hazardous Air Pollutants.

### **NEW SOURCES PERFORMANCE STANDARDS**

The following section of this evaluation discusses the applicability and requirements of all related New Source Performance Standards associated with the facility.

#### **40 CFR Part 60, Subpart VVa**

The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry. This is defined as producing one or more of the chemicals listed in §60.489. Lyten does not manufacture any of the chemicals listed in this section and is therefore not subject Subpart VVa.

#### **40 CFR Part 60 Subpart DDD**

The provisions of this subpart apply to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in § 60.561 of this subpart. Lyten does not manufacture any of these compounds and is therefore not subject to Subpart DDD.

#### **40 CFR Part 60 Subpart III**

The provisions of this subpart apply to each affected facility that produce any of the chemicals listed in § 60.617 as a product, co-product, by-product, or intermediate. Lyten does not manufacture any of the chemicals listed in this section and is therefore not subject to Subpart III.

#### **40 CFR Part 60 Subpart NNN**

Lyten does not use distillation in the manufacturing of its synthetic organic chemicals. As such, this subpart does not apply.

#### **40 CFR Part 60 Subpart RRR**

The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in § 60.707 as a product, co-product, by-product, or intermediate. Lyten does not manufacture any of the chemicals listed in this section and is therefore not subject to Subpart RRR.

### **STATEMENT OF COMPLIANCE**

#### **Regulation 2, Rule 1**

To ensure BACT is not triggered, a permit condition will be imposed limiting daily emissions to less than 9.0 pounds per day and require an annual source test to determine compliance. However, as shown in Table 1, at the maximum natural gas flow rate, each reactor has the potential to emit more than 9.0 pounds per day. To ensure continual compliance with this limit,

the natural gas throughput to each reactor will be limited to an amount corresponding to 9.0 pounds per day pursuant to Section 2-1-403. This limit will also ensure compliance with Regulation 2, Rule 5 as each reactor has the potential to emit toxic air contaminants in excess of the Regulation 2, Rule 5 acute and chronic thresholds as shown in Tables 3 and 4.

**Regulation 2, Rule 6**

Major facilities, as defined in Regulation 2-6-212, are subject to the requirements of Regulation 2-6. The facility is not expected to emit more than 100 tons of a single Regulated pollutant, 10 tons of a single HAP, or 25 tons of a combination of HAPs. Therefore, the facility is not subject to the requirements of this regulation.

**Regulation 6, Rule 1**

Pursuant to Regulation 6-1-301, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree. In addition, per Regulation 6-1-302, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by District regulations. The facility's operation is expected to meet the requirements of this regulation.

Pursuant to Regulation 6-1-310, no person shall emit total suspended particulate (TSP) from any source in excess of 343 micrograms per dry standard cubic meter (0.15 grams per dry standard cubic foot) of exhaust gas volume. Lyten is expecting this operation to generate a negligible quantity of total suspended particulate matter emissions. Considering the use of a cyclone and filter, the TSP emissions are not expected to exceed the limits listed within this regulation. A source test will be required to verify the compliance with this regulation.

**Regulation 8, Rule 2**

Regulation 8-2 applies to miscellaneous operations. Pursuant to Regulation 8-2-201, a miscellaneous operation is any operation other than those limited by other Regulation 8 rules, Regulation 10 rules, or Regulation 12-12. The facility's reactors are subject to Regulation 8-28, while the facility's wipe cleaning operation is subject to Regulation 8-4. Therefore, no sources part of this application are subject to the requirements of this regulation.

**Regulation 8, Rule 4**

This regulation applies only to this facility's wipe cleaning operation. Pursuant to Regulation 8-4-302, a person shall not use solvents or apply surface coatings unless one or more of the following requirements are satisfied:

- 1. A person shall not emit more than 4,533 kg (5 tons) of VOCs from any source during any calendar year;*
- 2. Emissions are controlled by an approved emission control system with an overall abatement efficiency of 85% on a mass basis. If reduction is achieved by incineration, at least 90% by weight of the organic compound emissions shall be oxidized to carbon dioxide; or,*

*3. The coating operation uses a coating with a VOC content less than or equal to 420 grams per liter (3.5 lb/gal) of coating as applied.*

The facility is expected not to emit more than 5 tons of VOCs from any source during any calendar year. See emissions section for potential to emit VOC emissions.

In addition, according to Regulation 8-4-312, unless emissions to the atmosphere are controlled by an approved emission control system with an overall abatement efficiency of at least 85%, any person using organic solvent for surface preparation and cleanup or any person mixing, using or disposing of organic solvent must meet the following requirements:

- 1. Use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup;*
  - 2. Organic solvent for the cleanup of spray equipment, including paint lines, shall not exceed a VOC content in excess of 50 g/l (0.42 lb/gal) unless one of the following are met:
    - i) Solvent is pressurized through spray equipment with atomizing air off or dispensed from a small non-atomizing container, and collected and stored in a closed container until recycled or properly disposed of offsite; or,*
    - ii) A spray gun washer subject to and in compliance with the requirements of Regulation 8-16 is used; and,**
- 3. Use closed containers for solvents or coatings when not in use.*

Conditions will be included to ensure compliance with all of Regulation 8-4-312.

Pursuant to Regulation 8-4-501, any person using coatings or solvents subject to this rule shall:

- 1. Maintain a current list of coatings and solvents in use that provide all of the data necessary to evaluate compliance, such as VOC content and mix ratios of coatings, catalysts and reducers and density and VOC content of solvent;*
- 2. Record on an annual basis the quantity of coating applied;*
- 3. Record the air pollution abatement equipment key system operating parameters on a daily basis;*
- 4. Record, on a monthly basis, coating usage for coatings subject to subsection 8-4-302.3 and solvents used for surface preparation and clean up; and,*
- 5. Retain records for the previous 24 months, which shall be made available for inspection by the District.*

Conditions will be included to ensure compliance with the recordkeeping requirements of Regulation 8-4-501.

### **Regulation 8, Rule 9**

The purpose of this Rule is to limit emission of precursor organic compounds from vacuum producing systems. Lyten does not use a vacuum producing system according to the definition of vacuum producing system within Regulation 8-9-203.

**Regulation 8, Rule 10**

Pursuant to Regulations 8-10-101 and 8-10-201, the purpose of this regulation is to limit the emission of organic compounds from depressurizing and opening of process vessels at refineries and chemical plants.

According to Regulation 8-10-201, any facility engaged in producing organic or inorganic chemicals and/or manufacturing products by chemical processes, or any facility or operation that has 325 as the first three digits in the North American Industrial Classification Standard code, is subject to this regulation. Lyten meets both of those conditions and is therefore subject to this regulation.

However pursuant to Regulation 8-10-113 The provisions of this Rule shall not apply to any process vessel with a volume of less than 100 cubic feet (748 gallons).

Therefore, the operation is not subject to the provision of Regulation 8-10.

**Regulation 8, Rule 16**

According to Regulation 8-16-111, wipe cleaning operations are not subject to the requirements of Regulation 8-16-301 through 8-16-304. In addition, wipe cleaning operations are subject to the requirements of Regulation 8-16-501.3.

Regulation 8-16-501.3 requires monthly records showing the type and amount of solvents used, which are subject to Regulation 8-16-111. The requirements of Regulation 8-16 will be included as a permit condition.

**Regulation 8, Rule 18**

The purpose of this Rule is to limit emissions of total organic compounds from equipment leaks at refineries, chemical plants, bulk plants, and bulk terminals including, but not limited to: valves, connectors, pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, fittings, sampling ports, meters, pipes, and vessels.

Pursuant to rule 8-18-111, the provisions of this rule shall not apply to facilities which have less than 100 valves or less than 10 pumps and compressors. Such facilities are subject to the requirements of Regulation 8, Rule 22

As such, Lyten meets the exemption of Rule 8-18-111 and is not subject to Regulation 8, Rule 18.

**Regulation 8, Rule 22**

The purpose of this Rule is to limit emissions of precursor organic compounds from valves and flanges at chemical plants.

Pursuant to rule 8-22-113, the provisions of this Rule shall not apply to valves or flanges which handle only commercial natural gas.

[REDACTED]. As such, they are not subject to the requirements of this rule. [REDACTED]

**Regulation 8, Rule 28**

The purpose of this Rule is to prevent the episodic emissions of organic compounds from pressure relief devices on equipment handling gaseous organic compounds at petroleum refineries, and to collect information on episodic organic and inorganic compound emissions from pressure relief devices at petroleum refineries and chemical plants.

[REDACTED]

**California Environmental Quality Act**

According to the submitted Form P-101B, the applicant states that the project required a City of San Jose building permit, but had no other related permits or other public approvals were required. The Air District is not aware of any California Environmental Quality Act (CEQA) review done by the City of San Jose for this project.

The Air District has determined that this permit action is exempt from CEQA because the Air District’s approval was “ministerial” and therefore exempt from CEQA under Public Resource Code Section 21080(b)(1) and CEQA Guidelines Section 15268(a). The Air District’s regulatory requirements that governed the approval of this permit involved objective numerical standards using only source test results, and established formulas from published engineering and scientific handbooks which did not allow for or require any subjective judgment or discretion to interpret or apply; and the Air District was legally compelled to approve the project where it complied with such standards. Also, the permit application did not trigger BACT or TBACT. Additionally, solvent wipe cleaning is covered by Chapter 6.3 of the Bay Area Air Quality Management District’s Permit Handbook. Thus, the Air District’s action was ministerial.

Therefore, based on the above findings, the Air District has determined that this permit action is exempt from CEQA.

**Public Notification (Regulation 2-1-412)**

Since this project will emit toxic air contaminants and be located within 1,000 feet of a kindergarten through grade 12 school site, the project is subject to the public notification requirements of Regulation 2-1-412.

A 30-day public notice will be sent to all parents of students of the following school(s) and all residents and businesses within 1,000 feet of the facility.

<b>Table 7. Schools Subject to Public Noticing for Application # 683974</b>		
<b>School Name</b>	<b>Street Address</b>	<b>City</b>
Rise Academy	4415 Fortran Court	San Jose, CA 95134

**PERMIT CONDITIONS**

The following permit condition is for S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, S-39

A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-15, A-16, A-17, A-18, A-19, A-20, A-22, A-23, A-24, A-25, A-26, A-27, A-28, A-29, A-30, A-31, A-32, A-33, A-34, A-35, A-36, A-37, A-38, A-39, A-40, A-41, A-42, A-43, A-44, A-45, A-46, A-47, A-48, A-49, A-50, A-51, A-52, A-53, A-54, A-55, A-56, A-57, A-58, A-59, A-60, A-61, A-62, A-63, A-64, A-65, A-66, A-67, A-68, A-69, A-70, A-71 A-72, A-73, A-74, A-75, A-76, A-77, A-78, A-79, A-80, A-81, A-82, A-83, A-84, A-85, A-86, A-87, A-88, A-89, A-90, A-91, A-92, A-93, A-94, A-95, A-96, A-97, A-98, A-99, A-100, A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-111, A-112, A-113, A-114, A-115, A-116, A-117, A-118, A-119, A-120, A-121 A-122, A-123, A-124, A-125, A-126, A-127, A-128, A-129, A-130, A-131, A-132, A-133, A-134, A-135, A-136, A-137, A-138, A-139, A-140, A-141, A-142, A-143, and A-144.

**Permit Condition #100190**

For purposes of this permit condition, all pollutants are as defined in either Regulation 2, Rule 1 (for criteria air pollutants) or Regulation 2, Rule 5 (for toxic air contaminants). Non-precursor organic compounds (NPOC) include methane and ethane per Regulation 2, Rule 1.

**GENERAL REQUIREMENTS**

1. The owner/operator of each reactor sources listed below shall be abated by the corresponding cyclone, filter, condenser, and adsorber abatement devices at all times of operation:

Source	Abatement Devices
S-4, Reactor	Cyclone A-1, Filter A-2, Condenser A-3, Adsorber A-4
S-5, Reactor	Cyclone A-5, Filter A-6, Condenser A-7, Adsorber A-8
S-6, Reactor	Cyclone A-9, Filter A-10, Condenser A-11, Adsorber A-12
S-7, Reactor	Cyclone A-13, Filter A-14, Condenser A-15, Adsorber A-16
S-8, Reactor	Cyclone A-17, Filter A-18, Condenser A-19, Adsorber A-20
S-9, Reactor	Cyclone A-21, Filter A-22, Condenser A-23, Adsorber A-24
S-10, Reactor	Cyclone A-25, Filter A-26, Condenser A-27, Adsorber A-28
S-11, Reactor	Cyclone A-29, Filter A-30, Condenser A-31, Adsorber A-32
S-12, Reactor	Cyclone A-33, Filter A-34, Condenser A-35, Adsorber A-36
S-13, Reactor	Cyclone A-37, Filter A-38, Condenser A-39, Adsorber A-40
S-14, Reactor	Cyclone A-41, Filter A-42, Condenser A-43, Adsorber A-44
S-15, Reactor	Cyclone A-45, Filter A-46, Condenser A-47, Adsorber A-48
S-16, Reactor	Cyclone A-49, Filter A-50, Condenser A-51, Adsorber A-52
S-17, Reactor	Cyclone A-53, Filter A-54, Condenser A-55, Adsorber A-56
S-18, Reactor	Cyclone A-57, Filter A-58, Condenser A-59, Adsorber A-60

S-19, Reactor	Cyclone A-61, Filter A-62, Condenser A-63, Adsorber A-64
S-20, Reactor	Cyclone A-65, Filter A-66, Condenser A-67, Adsorber A-68
S-21, Reactor	Cyclone A-69, Filter A-70, Condenser A-71, Adsorber A-72
S-22, Reactor	Cyclone A-73, Filter A-74, Condenser A-75, Adsorber A-76
S-23, Reactor	Cyclone A-77, Filter A-78, Condenser A-79, Adsorber A-80
S-24, Reactor	Cyclone A-81, Filter A-82, Condenser A-83, Adsorber A-84
S-25, Reactor	Cyclone A-85, Filter A-86, Condenser A-87, Adsorber A-88
S-26, Reactor	Cyclone A-89, Filter A-90, Condenser A-91, Adsorber A-92
S-27, Reactor	Cyclone A-93, Filter A-94, Condenser A-95, Adsorber A-96
S-28, Reactor	Cyclone A-97, Filter A-98, Condenser A-99, Adsorber A-100
S-29, Reactor	Cyclone A-101, Filter A-102, Condenser A-103, Adsorber A-104
S-30, Reactor	Cyclone A-105, Filter A-106, Condenser A-107, Adsorber A-108
S-31, Reactor	Cyclone A-109, Filter A-110, Condenser A-111, Adsorber A-112
S-32, Reactor	Cyclone A-113, Filter A-114, Condenser A-115, Adsorber A-116
S-33, Reactor	Cyclone A-117, Filter A-118, Condenser A-119, Adsorber A-120
S-34, Reactor	Cyclone A-121, Filter A-122, Condenser A-123, Adsorber A-124
S-35, Reactor	Cyclone A-125, Filter A-126, Condenser A-127, Adsorber A-128
S-36, Reactor	Cyclone A-129, Filter A-130, Condenser A-131, Adsorber A-132
S-37, Reactor	Cyclone A-133, Filter A-134, Condenser A-135, Adsorber A-136
S-38, Reactor	Cyclone A-137, Filter A-138, Condenser A-139, Adsorber A-140
S-39, Reactor	Cyclone A-141, Filter A-142, Condenser A-143, Adsorber A-144

[Basis: Cumulative Increase]

- The owner/operator of S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39, shall not emit more than the following daily emission limits in any calendar day from either S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, or S-39:

Pollutant	Daily (pounds)
NPOC	9.0
POC	9.0
PM <sub>10</sub>	9.0
PM <sub>2.5</sub>	9.0

[Basis: BACT Avoidance and Cumulative Increase]

- The owner/operator of the Reactors S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39, shall not emit total combined emissions from the aforementioned sources in excess of any acute or chronic trigger levels of Regulation 2-5.

[Basis: Toxics]

4. The owner/operator of Reactors S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39, shall not emit total suspended particulate emissions from any of the aforementioned sources in excess of 343 micrograms per dry standard cubic meter (0.15 grams per dry standard cubic foot) of exhaust gas volume, after abatement.  
[Basis: Regulation 6-1-310.1]
5. The owner/operator of S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39, shall not use more 198.4 standard cubic feet of natural gas at each source in any day.  
[Basis: BACT Avoidance, Regulation 2-5, Cumulative Increase, Section 2-1-403]
6. The owner/operator of A-3, A-7, A-11, A-15, A-19, A-23, A-27, A-31, A-35, A-39, A-43, A-47, A-51, A-55, A-59, A-63, A-67, A-71, A-75, A-79, A-83, A-87, A-91, A-95, A-99, A-103, A-107, A-111, A-115, A-119, A-123, A-127, A-131, A-135, A-139, and A-143 shall operate each condenser at a temperature no higher than 55 degrees Fahrenheit whenever an associated source operates. The owner/operator shall equip each condenser (A-3, A-7, A-11, A-15, A-19, A-23, A-27, A-31, A-35, A-39, A-43, A-47, A-51, A-55, A-59, A-63, A-67, A-71, A-75, A-79, A-83, A-87, A-91, A-95, A-99, A-103, A-107, A-111, A-115, A-119, A-123, A-127, A-131, A-135, A-139, and A-143) with a temperature indicator with the appropriate range.  
[Basis: Regulation 2-1-403, BACT Avoidance, Toxics]
7. The owner/operator shall operate each reactor only when a non-resettable natural gas usage meter and non-resettable totalizing meter, which measures hours of operation and the date and time, is installed at each reactor.  
[Basis: Regulation 2-1-403]
8. To demonstrate compliance with Parts 2 and 3; the owner/operator of the Reactors S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39 shall use measurements from either Air District-certified continuous emissions monitors (if available) or Air District-approved source or laboratory tests in combination with records of activity (material usage, production) of the aforementioned sources. The owner/operator shall use Air District-approved calculation methodologies and assumptions.  
[Basis: Regulation 2-1-403]

#### **SOURCE TEST/SAMPLING REQUIREMENT**

9. No later than 90 days from the startup of S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, and S-39, the owner/operator shall conduct Air District-approved source tests to determine compliance



with the limits in Parts 2, 3, and 4. During each test, the owner/operator shall record natural gas usage on a per source basis and condenser temperature on a per condenser basis. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after the source test.

[Basis: Cumulative Increase, Regulation 2, Rule 5, Regulation 6-1-310.1, and Regulation 2-1-403]

10. The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.  
[Basis: BACT, Cumulative Increase]

#### **RECORDKEEPING REQUIREMENTS**

11. To determine compliance with the above condition, the owner/operator shall maintain the following records:
  - a. Hourly natural gas usage (per source basis)
  - b. Daily natural gas usage (per source basis)
  - c. Annual natural gas usage (per source basis)
  - d. Duration of operation, which includes start dates/times and end dates/times
  - e. Source test records

These records shall be retained onsite for two (2) years from the date of entry and made available for inspection by Air District staff upon request. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable Air District regulation.

[Basis: Recordkeeping]

The following permit condition is for S-40.

#### **Permit Condition 100187**

1. The Owner/Operator of S-40 shall not exceed the following usage limit(s):
  - a. Acetone 50 gallons/year (during any consecutive twelve-month period);
  - b. Acetone 1.3 gallons/day.(Basis: Cumulative Increase, BACT Avoidance)
2. The Owner/Operator of source S-40 may use solvent other than the material specified in Part 1 above, and/or usages in excess of those specified in Part 1 above, provided that the Owner Operator can demonstrate that all of the following are satisfied:
  - a. The total POC and NPOC emissions from S-40 do not exceed 3,285 pounds in any consecutive twelve-month period;
  - b. The total POC and NPOC emissions from S-40 do not exceed 9.0 pounds in any single day; and

- c. The use of these alternate materials does not increase toxic air contaminant (TAC) emissions above any acute and/or chronic TAC risk screening trigger level in Table 2-5-1 of Regulation 2, Rule 5. The owner/operator shall maintain records of any TAC component contents of each alternate material used and supporting mass emission calculations demonstrating TAC emissions do not exceed the acute and/or chronic TAC trigger levels in Table 2-5-1 of Regulation 2, Rule 5 by calculating TAC emissions on a pound per hour and pound per year basis, respectively.

(Basis: Cumulative Increase, BACT Avoidance)

3. To determine compliance with the above conditions, the Owner/Operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions, including the following information:
  - a. Quantities of solvent used at each source on a daily and monthly basis;
  - b. If a material other than that specified in Part 1 above is used, NPOC and toxic component contents of each alternate material used; and mass emission calculations to demonstrate compliance with Part 2.a. on a monthly basis and 2.b. on a daily basis;
  - c. Monthly usage and/or daily emission calculations shall be totaled for each consecutive twelve-month period.

(Basis: Cumulative Increase)

*End of Conditions*

**RECOMMENDATION**

The Air District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source is subject to the public notification requirements of Regulation 2-1-412. After the comments are received from the public and reviewed, the Air District will make a final determination on the permit. I recommend that the Air District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct and/or a Permit to Operate for the following equipment:

**S-4 Reactor #1**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-1 Cyclone**

**A-2 Filter**

**A-3 Condenser**

**A-4 Adsorber**

**S-5 Reactor #2  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-5 Cyclone  
A-6 Filter  
A-7 Condenser  
A-8 Adsorber**

**S-6 Reactor #3  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-9 Cyclone  
A-10 Filter  
A-11 Condenser  
A-12 Adsorber**

**S-7 Reactor #4  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-13 Cyclone  
A-14 Filter  
A-15 Condenser  
A-16 Adsorber**

**S-8 Reactor #5  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-17 Cyclone  
A-18 Filter  
A-19 Condenser  
A-20 Adsorber**

**S-9 Reactor #6  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-21 Cyclone  
A-22 Filter  
A-23 Condenser  
A-24 Adsorber**

**S-10 Reactor #7  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-25 Cyclone  
A-26 Filter  
A-27 Condenser  
A-28 Adsorber**

**S-11 Reactor #8  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-29 Cyclone  
A-30 Filter  
A-31 Condenser  
A-32 Adsorber**

**S-12 Reactor #9  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-33 Cyclone  
A-34 Filter  
A-35 Condenser  
A-36 Adsorber**

**S-13 Reactor #10**

**Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-37 Cyclone  
A-38 Filter  
A-39 Condenser  
A-40 Adsorber**

**S-14 Reactor #11**

**Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber**

**S-15 Reactor #12**

**Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-45 Cyclone  
A-46 Filter  
A-47 Condenser  
A-48 Adsorber**

**S-16 Reactor #13**

**Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-49 Cyclone  
A-50 Filter  
A-51 Condenser  
A-52 Adsorber**

**S-17 Reactor #14**

**Thermal or Microwave-based**

**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-53 Cyclone  
A-54 Filter  
A-55 Condenser  
A-56 Adsorber**

**S-18 Reactor #15  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-1 Cyclone  
A-2 Filter  
A-3 Condenser  
A-4 Adsorber**

**S-19 Reactor #16  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-5 Cyclone  
A-6 Filter  
A-7 Condenser  
A-8 Adsorber**

**S-20 Reactor #17  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-9 Cyclone  
A-10 Filter  
A-11 Condenser  
A-12 Adsorber**

**S-21 Reactor #18  
Thermal or Microwave-based  
Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-13 Cyclone
- A-14 Filter
- A-15 Condenser
- A-16 Adsorber

- S-22 Reactor #19  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

- A-17 Cyclone
- A-18 Filter
- A-19 Condenser
- A-20 Adsorber

- S-23 Reactor #20  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

- A-21 Cyclone
- A-22 Filter
- A-23 Condenser
- A-24 Adsorber

- S-24 Reactor #21  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

- A-25 Cyclone
- A-26 Filter
- A-27 Condenser
- A-28 Adsorber

- S-25 Reactor #22  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

**A-29 Cyclone  
A-30 Filter  
A-31 Condenser  
A-32 Adsorber**

**S-26 Reactor #23  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-33 Cyclone  
A-34 Filter  
A-35 Condenser  
A-36 Adsorber**

**S-27 Reactor #24  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-37 Cyclone  
A-38 Filter  
A-39 Condenser  
A-40 Adsorber**

**S-28 Reactor #25  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber**

**S-29 Reactor #26  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**



*Abated by*

A-45 Cyclone  
A-46 Filter  
A-47 Condenser  
A-48 Adsorber

S-30 Reactor #27  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

A-49 Cyclone  
A-50 Filter  
A-51 Condenser  
A-52 Adsorber

S-31 Reactor #28  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

A-53 Cyclone  
A-54 Filter  
A-55 Condenser  
A-56 Adsorber

S-32 Reactor #29  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

A-41 Cyclone  
A-42 Filter  
A-43 Condenser  
A-44 Adsorber

S-33 Reactor #30  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]

*Abated by*

- A-45 Cyclone**
- A-46 Filter**
- A-47 Condenser**
- A-48 Adsorber**

- S-34 Reactor #31**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-49 Cyclone**
- A-50 Filter**
- A-51 Condenser**
- A-52 Adsorber**

- S-35 Reactor #32**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-53 Cyclone**
- A-54 Filter**
- A-55 Condenser**
- A-56 Adsorber**

- S-36 Reactor #33**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

- A-41 Cyclone**
- A-42 Filter**
- A-43 Condenser**
- A-44 Adsorber**

- S-37 Reactor #34**  
**Thermal or Microwave-based**  
**Material: Natural Gas, Capacity:** [REDACTED]

*Abated by*

**A-45 Cyclone  
A-46 Filter  
A-47 Condenser  
A-48 Adsorber**

**S-38 Reactor #35  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-49 Cyclone  
A-50 Filter  
A-51 Condenser  
A-52 Adsorber**

**S-39 Reactor #36  
Thermal or Microwave-based  
Material: Natural Gas, Capacity: [REDACTED]**

*Abated by*

**A-53 Cyclone  
A-54 Filter  
A-55 Condenser  
A-56 Adsorber**

**S-40 Solvent Cleaning (Wipe Cleaning)  
Up to 50 gallons per calendar year of acetone usage.**

**By: Kevin Creaven  
Air Quality Engineer**

**Date: November 30, 2023**