Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Permit Evaluation
and
Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT

for

The Dow Chemical Company
Facility #A0031

Facility Address:
901 Loveridge Road
Pittsburg, CA 94565

Mailing Address:
901 Loveridge Road
Pittsburg, CA 94565

November 2012

TABLE OF CONTENTS

A. Background 3

B. Facility Description 4

C. Permit Content 16

I. Standard Conditions 16

II. Equipment 16

III. Generally Applicable Requirements 23

IV. Source-Specific Applicable Requirements 24

V. Schedule of Compliance 74

VI. Permit Conditions 74

VII. Applicable Limits and Compliance Monitoring Requirements 78

VII. Applicable Limits and Compliance Monitoring Requirements 78

VIII. Test Methods 97

IX. Permit Shield 97

D. Alternate Operating Scenarios 97

E. Compliance Status 97

F. Differences between the Application and the Proposed Permit 98

APPENDIX A BAAQMD COMPLIANCE REPORT 99

APPENDIX B GLOSSARY 103

APPENDIX C MAXIMUM EXPECTED EMISSIONS 113

APPENDIX D ENGINEERING EVALUATIONS 121

Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It was designated a major facility because it had the "potential to emit," as defined by BAAQMD Regulation 2-6-218, of more than:

100 tons per year of a regulated air pollutant;
10 tons per year of a hazardous air pollutant; or
25 tons per year of a combination of hazardous air pollutants (HAPs)

when the District began screening for major facilities. This determination included numerous combustion sources used to supply electricity and steam to The Dow Chemical Company (Dow). These sources were later sold to Calpine and became Calpine Pittsburg (Site B1928). At the present time all of the sources at Calpine Pittsburg have been permanently retired except for S-11 Auxiliary Boiler which has been transferred back to Dow and is now identified as S-1011.

The potential to emit from Dow has decreased significantly since it was originally designated as a major facility primarily due to the regulated air pollutant emissions from the combustion sources used to supply electricity and steam to the site. The potential to emit of HAPs also exceeded the 10 tons per year of a single HAP and the 25 tons per year of aggregate HAP. Dow has voluntarily added emissions controls over the years to reduce HAP emissions. In 2008, Dow accepted a facility wide condition to limit HAP emissions below 9 tons/year of any single HAP and 23 tons/year for aggregate HAP.

Even though the potential to emit for regulated air pollutants and HAP may no longer exceed major source thresholds, the facility is required to maintain a Title V permit since it is subject to 40 CFR Part 63 Subpart EEE. This National Emissions Standard for Hazardous Air Pollutants which applies to two halogen acid furnaces at the site (S-336, S-389) requires facilities to maintain a Title V permit in accordance with 40 CFR 63.1200(a)(2).

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A0031.

B. Facility Description

The Dow Chemical Company owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California. Dow currently manufactures agricultural products and intermediates, Vikane® fumigant for termite infestations, Dowicil® antimicrobials for use in paints and cosmetics, and hydrochloric acid. The manufacturing site is an integrated chemical plant utilizing styrene, butadiene, chlorine, anhydrous hydrogen fluoride, sulfur dioxide, potassium fluoride, methyl pyridine and dichloropropene in reactions to produce the various products.

The equipment utilized at the site includes, reactors, storage tanks, combustion devices, loading and unloading facilities, pumps, valves, and flanges. Emissions from most of the equipment are collected and controlled using abatement equipment such as vapor recovery systems, scrubbers, absorbers or thermal destruction devices. The major types of emissions at the Pittsburg facility are methylene chloride, sulfuryl fluoride, and Freon 22.

The emissions from the facility have varied with the amount of chemical products produced each year. The actual emissions summaries submitted by the plant for 2003, for 2008, and for 2011 are shown below.

Year	NOx (tons/year)	CO (tons/year)	POC (tons/year)	PM10 (tons/year)	SOx (tons/year)	HAP (tons/year)
2003	1510.8	335.4	27.4	59.1	< 1.0	21.44
2008	3.7	1.3	1.6	1.0	0.02	14.6
2011	10.0	2.0	29.0	8.0	< 1.0	< 23.0

The emissions summary for 2003 includes the combustion sources that supplied electricity and steam to Dow. These sources were later sold to Calpine (Calpine Pittsburg Site B1928). All of these sources have been shutdown except for an Auxiliary Boiler S-11 at Calpine Pittsburg which has been transferred in 2010 to Dow and is identified as S-1011. The emissions from the facility have decreased since 2003.

The emissions summary for 2011 includes the S-1011 Auxiliary Boiler emissions. This boiler is a standby unit and is only used when Los Medanos Energy Center (Site B1866) cannot supply Dow steam. The data is from the District's data bank.

NSR Applications Processed Since Last Title V Revision

Dow has submitted numerous permit applications since the last Title V permit revision. These are summarized in the following Table.

NSR Application No.	**Description**	**Title V Revision**	**Number of Sources**	**Issuance Date**
14456	MEI Plant Upgrade	Minor	6	5/29/07
14668	Process Vessel Replacement	None	1	7/12/06
14909	DCP Unloading Rack	Minor	1	9/21/06
15133	Dryer Replacement, S-464 replaced with S-465	Minor	1	10/11/06
15723	Alteration of A-86	None	1	4/12/07
16041	Modify S-25, AC Expired	None	1	6/19/07
16335	Alteration S-44, S-446	None	2	9/18/07
16877	Replace Reactor S-446	None	1	1/9/08
16988	Alteration A-85	None	1	3/10/08
17600	S-449 Alteration, Change of Conditions	Minor	1	5/22/08
17940	HAP Minor Condition, Facility Wide	Significant	155	5/7/08
18563	CO Catalyst Installation, A-205	Minor	1	12/3/08
18690	S-434 Alteration	None	1	9/16/08
19565	GDF Modification, Remove Phase II	Minor	1	3/19/09
20156	Alteration A-192	None	1	4/20/09
21055	Banking, Shutdown S-25, S-209	None	2	10/27/09
21795	Carbon Tetrachloride Rail Car Loading Rack, S-483	Minor	1	11/9/10
21858	Nitrapyrin Formulation Plant, S-718, S-728	Minor	2	10/4/10
Source Transfer (See Title V 23414)	S-1011 Auxiliary Boiler	Minor	1	3/19/10
22775	Alteration of TF and FTF Plants (S-474 and	Minor	2	8/2/11

NSR Application No.	Description	Title V Revision	Number of Sources	Issuance Date
	S-694)			
23595	Burner retrofit on S-444 to meet Regulation 9, Rule 7 requirements.	Minor	1	10/11/11
23852	Replacement of T-3 process vessel with an identical process vessel at S-44 N-Serve Plant.	None	1	3/7/12
23934	Change of conditions on S-680 Carbon Tetrachloride Storage Tank and S-681 Truck Loading/Unloading Operation	Minor	2	2/29/12

Application No. 14456

The MEI plant was expanded and source descriptions and conditions were revised under this application. In the evaluation the MEI plant was considered subject to 40 CFR 63 Subpart FFFF. The compliance date for this MACT standard was extended by EPA until May 10, 2008. Dow accepted a condition to limit emissions of HAP from the facility to below major source thresholds on April 25, 2008.

After limiting the HAP potential to emit below major source thresholds, Subpart FFFF does not apply to the MEI plant. This permitting action is considered a minor revision of the Title V permit, since Subpart FFFF does not apply. The changes to condition 4780 are shown in the draft Title V permit and are considered a minor revision.

Application No. 14668

Dow replaced two process vessels that are part of S-434. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied to replace two process vessels (T-7 and B-9), which were permitted as part of the Manufacturing Services Facility, S-434. Both vessels were replaced due to age and will be replaced with identically-sized vessels. The replacement did not affect the process throughput or system capacity.

- Vessel T-7 is used to blend carbon tetrachloride with process recycle streams prior to distillation. It is being replaced with an identically sized horizontal pressure vessel, and the new vessel will continue to be vented to the Manufacturing Services Thermal Oxidizer, S-336.

- Vessel B-9 is used to absorb hydrogen chloride vapor into water to produce hydrochloric acid. The replacement vessel dimensions and capacity are identical to the current vessel, and the replacement will continue to be vented to the caustic scrubber, A-199.

Application No. 14909

Dow moved DCP unloading operation to the loading rack at S-5. There was an emissions increase and condition changes to condition 11276 associated with this application. This application is considered a minor revision under Regulation 2, Rule 6.

Dow changed the location of DCP Unloading from an existing loading area located near DCP Storage Tanks (S-580, S-581, S-582, and S-583) to a product loading area (S-5). During DCP unloading at the previous location the rail car or tank truck used to fill tanks S-580, S-581, S-582, and S-583 were in a location that blocks access to areas of the facility.

Per the applicant there will be no increase in DCP throughput due to moving the DCP loading area from the existing location to the product loading area at S-5.

Application No. 15133

Dow replaced S-464 Dryer with an identical unit S-465. There was an emissions increase and condition changes associated with this application. S-465 is subject to condition 23250. Condition 1359 associated with S-464 has been archived. This application is considered a minor revision under Regulation 2, Rule 6.

Dow replaced S-464, Plant 663, D-413 Dryer with a New Unit. Dow considers the dryer replacement to be like for like. The dimensions and maximum throughput of the units are the same. The old dryer S-464 was abated by a bag filter (A-95) and a vacuum system with condenser (A-114). The new dryer S-465 is abated by A-95 and A-114. The emissions from the new dryer are the same as for the old dryer.

Application No. 15723

A-86 falling film hydrochloric acid absorber was altered with identical equipment. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied for an Authority to Construct for an alteration of Abatement Device A-86 a falling film hydrochloric acid absorber abating S-336, the Manufacturing Services Thermal Oxidizer. A-86 consists of two vessels in parallel, B-14A and B-14B. Each vessel is approximately 28.36 feet long with an internal diameter of 21.25 inches. The vessels are carbon steel with graphite tubes. The vessels were replaced with identical absorber units (that are being built to original specifications).

Application No. 16041

This application was to modify S-25 Latex Storage Tank and this was never completed. This application does not require any Title V permit revisions.

Application No. 16335

S-44 N-Serve plant chemical reactor and S-446 Sym-Tet plant chemical reactor were altered. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied for an Authority to Construct for an alteration of S-44 N-Serve plant chemical reactor, and S-446 Sym-Tet plant chemical reactor. Dow replaced four vapor scrubber process vessels T-90, T-91, T-94, and T-96, which were part of sources S-44 and S-446.

T-90 is a two-compartment vessel that stores sodium hydroxide process solution used in two venture scrubbers that process a vapor stream from S-44 and S-446. T-91 stores sodium hydroxide process solution for a process scrubber that abates tank T-90 and for a packed tower B-91 that processes vapor from Tank T-91 itself. T-94 is a decanter for the condensate from the pressure swing absorber vacuum pump and vents back to the pressure swing absorber vessels. T-96 receives liquid from T-94 and returns this process solution back to the pressure swing absorber as seal water for the pressure swing absorber liquid ring vacuum pumps. All of these vessels vent back to the process, the process air emissions are abated by existing abatement device A-89 that is a venturi scrubber at the N-Serve/Sym-Tet plant.

The process vessels are being replaced with identical reactors (that are being built to original specifications).

Application No. 16877

S-446 was altered. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow submitted an application for an Authority to Construct for the replacement of three of four existing reactors at the existing Source S-446 (Sym-Tet plant). Three 500-gallon reactors will be replaced with a larger 1,500-gallon reactor.

The three old reactors (R-600A, 600C, and 600D) were in series with an existing 1,000-gallon reactor (R-600E). The new existing single replacement reactor (R600F) has a capacity of 1,500 gallons and be in series with the existing 1,000-gallon reactor. The annual throughput of this plant will not increase. The single reactor will have fewer component parts and process connectors than the three existing reactors have in service.

Application No. 16988

A-85 was altered. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied for an Authority to Construct for an alteration of Abatement Device A-85 acid absorber (packed bed scrubber). This fiberglass scrubber absorbs anhydrous HCl from the vapor phase into the water to produce 36% aqueous HCL. A-85 abates S-434 and S-576 and is downstream of A-87. The exhaust of A-85 is sent to A-199 and is eventually discharged at P-95.

The existing A-85 fiberglass scrubber is being replaced by an identical unit since the flange on the existing scrubber is damaged. The altered A-85 is identical to the existing scrubber. There is no change in process parameters or emissions due to the installation of this altered scrubber A-85.

Application No. 17600

S-449 was altered. There is no increase in emission associated with this application. Condition No. 18128 was revised, this application is considered a minor revision.

Dow has applied for an Authority to Construct for an alteration of S-449 Hydrochloric Acid Storage Tank vent. The vent was abated by Absorbers A-90 and A-91 exhausted to P-188. Dow rerouted the exhaust from S-449 to A-101 Falling Film Absorber and A-102 Scrubber which is exhausted to P-199.

Dow rerouted the tank exhaust from S-449 since the Vikane plant has been shutdown. Dow has requested that sources S-454 Vikane Plant, S-345 Perchloroethylene Storage Tank be archived. Dow also requests that A-197, A-46, A-90 and A-91 associated with S-454 also be archived.

Application No. 17940

Dow accepted a HAP minor permit condition so that facility wide emissions going forward from May 7, 2008 would not exceed major source thresholds. This application is considered a significant permit revision per 2-6-226.4. Condition 24004 limits the HAP emissions from the facility to 9 tons of any single HAP and 23 tons of aggregate HAP.

The new plant wide condition would make the facility a minor source of HAP under the Clean Air Act. The facility plans to prepare quarterly emissions estimates to demonstrate compliance with the new permit limit. All emissions estimates would need to be prepared using District approved methodology.

Application No. 18563

Dow installed A-205 CO catalyst to abate emissions from S-389 Sym-Tet Halogen Acid Furnace. There was no increase in emissions associated with this application. Permit condition No. 2039 was revised and this application is considered a minor permit revision. The abatement

device A-205 will be added to the Title V permit and the abatement devices associated with S-389 will be revised.

S-389 was abated by A-94 Acid Absorber, A-74 Caustic Scrubber, A-75 Particulate Scrubber, two Carbon Beds in parallel (A-76, A-80), and A-77 Non-Selective Catalytic Reduction.

A-205 Oxidation Catalyst was installed after A-77 and just prior to the stream being exhausted to atmosphere.

S-389 has a bypass stack that bypasses the two Carbon Beds in parallel (A-76, A-80), A-77 Non Selective Catalytic Reduction and the new A-205 Oxidation Catalyst. This bypass is used when the Non Selective Catalytic Reduction unit is undergoing periodic maintenance. The NOx emissions are limited to 6,194 lb/year in Part 10 of Condition 2039.

Application No. 18690

S-434 Manufacturing Services Facility was altered. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied for an Authority to Construct for an alteration of S-434 Manufacturing Services Facility. Dow replaced process vessel T-9 with a new process vessel of simular size.

The old T-9 (part of S-434) was a rubber lined steel vessel rated for 75 psig and 150 deg. F service. The new T-9 is a fiberglass reinforced plastic that is rated for 15 psig and 140 deg. F service. The materials are being changed due to corrosion of the existing process vessel. Pressure relief devices will remain set at 15 psig. The existing tank volume was 3,252 gallons and the new tank volume will be 2,974 gallons.

T-9 vents to A-87 HCL Absorber/Heat Exchanger which is followed by A-199 Packed Bed Scrubber. There is no emissions increase associated with changing out process vessel T-9.

Application No. 19565

Dow removed Phase II vapor recovery at S-174 Gasoline Dispensing Facility. There was an emissions increase and a change of conditions associated with this application. This application is considered a minor revision. S-174 is now subject to condition 24289 and 20666. Previously, S-174 was subject to condition 14098.

Dow applied for an A/C to remove the Phase II equipment from their existing gasoline dispensing facility under the low throughput exemption of Section 8-7-112.5. No other work is proposed under this application.

Dow currently operates a 10,000 gallon underground gasoline tank with two EW A4005 gasoline nozzles equipped with OPW EVR two-point Phase I and balance Phase II vapor recovery equipment. This equipment is permitted as Source 174 at Plant 31 and is subject to condition

#14098, which limits annual gasoline throughput to 940,000 gallons per year and #20666 for the OPW EVR Phase I system.

Dow is proposing to replace the vapor recovery nozzle and hose with conventional (i.e., non-vapor recovery) models and cap off the vapor return piping. All other equipment will remain unchanged. Once this project is completed, Dow will be exempt from Phase II vapor recovery requirements. They will not be subject to the April 1, 2009 deadline for installing EVR-certified Phase II vapor recovery equipment.

Application No. 20156

A-192 Dowicil Solvent Recovery System was altered. There was no emissions increase or condition changes associated with this application. This application does not require any Title V permit revisions.

Dow applied for an Authority to Construct for an alteration of A-192 Dowicil Solvent Recovery System. Dow replaced process vessel T-220 with a new process vessel of similar size. The old tank was stainless steel the new tank will be carbon steel. The existing tank has a length of 6' and an internal diameter of 4' with a capacity of 690 gallons. The new tank will have the same capacity and interior dimensions, but will be ½" thick.

There will be no change in operations due to the installation of the new tank. Material is transferred from a distillation column B-200 to T-220. T-220 vents to the solvent recovery system and the liquids are transferred to S-336 the thermal oxidizer in the Manufacturing Services facility.

Application No. 21055

This application was a banking application for the shutdown of S-25 Latex Storage Tank and S-209 Styrene Storage Tank. This application does not require any Title V permit revisions.

Application No. 21795

This application was to add a new carbon tetrachloride rail car loading rack S-483. There was an increase of emissions and changes of conditions associated with this application. This application is considered a minor revision. S-483 is subject to condition 11276 and 24779.

The new loading rack will be abated by a vapor balance system that sends the collected emissions to either the Symtet Halogen Acid Furnace S-389 or the Manufacturing Services Halgen Acid Furnace S-336. Dow also has an existing S-482 Carbon Tetrachloride Rail Car Loading rack.

Application No. 21858

This permit application was for a new Nitrapyrin formulation plant. There was an increase of emissions and changes of conditions associated with this application. This application is

considered a minor revision. S-718 Nitrapryin Plant and S-728 Ethylene Diamine storage tank are subject to permit condition 24763.

Dow applied for an Authority to Construct a Nitrapyrin Formulation Plant. The plant has been constructed on the old latex plant site and utilizes equipment from the former latex plant, which was shutdown in 2009. The latex plant operated from 1956 to 2009. Nitrapyrin nitrogen stabilizer is a commercial agricultural product that optimizes the yield potential of corn crops by ensuring nitrogen is available in the root zone during key stages of corn growth when used with liquid fertilizer or manure.

The Nitrapyrin plant consists of the following equipment:

Source	**Dow ID**	**Description**	**Size (gals)**	**Exempt**
S-718		Nitrapyrin Formulation Plant		Not Exempt
S-719 (exempt)	D-121 A	Aromatic 200 Pressure Tank	35,900	2-1-123.3.2
	Tote	Drapex	Unknown	2-1-123.3.6
	Isotainer	N-Serve TG	Unknown	2-1-103
S-720	T-310	Organic Mix	9,000	2-1-103
S-721 (exempt)	D-110A	PAPI Storage Pressure Tank	7,900	2-1-123.3.2
	T-751, Tote	Proxel	375	2-1-103
S-722 (exempt)	T-8	Tergitol S-15	5,900	2-1-123.3.6
S-723 (exempt)	T-9	Tergitol S-15	5,900	2-1-123.3.6
	Tote	Antifoam	Unknown	2-1-103
S-724 (exempt)	T-15	Propylene Glycol Storage	7,800	2-1-123.3.2
S-725	V-250	Aqueous Mix	2,900	2-1-103
S-726	T-112	Emulsion Storage	8,800	2-1-103
S-727	T-11	Gel Phase Mix	1,500	2-1-103
S-728	T-20	Ethylene Diamine Storage Pressure Tank	8,200	Not Exempt
S-729	V-100	Encapsulation Vessel	8,200	2-1-103
S-730	T-569	Nitrapyrin Formulation Storage	80,000	2-1-103
S-731	T-570	Nitrapyrin Formulation Storage	80,000	2-1-103
S-733	T-216	Product Check Tank	11,500	2-1-103

Two sources are not considered exempt from District permitting requirements: S-718 Nitrapyrin Formulation Plant and S-728 Ethylene Diamine Storage Pressure Tank. The emissions from S-718 are fugitive POC emissions from leaks in various components. The emissions of Ethylene Diamine from S-728 are considered to be negligible due to the fairly low vapor pressure of the material, 0.207 psia, and the fact that the tank is a pressure tank that is vapor balanced when loaded. There are no normal breathing and working losses associated with this tank. All of the remaining tanks associated with the project are exempt as identified above.

Application No. 22775

This permit application was to reroute a process vent from S-474 Chemical Reactor to S-694 Reaction/HCl Absorption System. The process vent from S-474 was previously abated by A-101 Falling Film Absorber (H-205) and A-102 Scrubber (B-206) is now abated by S-694 Reaction/HCl Absorption System. S-449 HCl Strorage Tank was removed from service. The net emissions from the project were decreased. This application required changes to the abatement device descriptions for S-474 and S-694 and the removal of S-449 from the Title V permit. This application is considered a minor revision to the Title V permit.

Dow applied for an Authority to Construct for an alteration of the hydrogen chloride absorption systems in use at the Trifluoro (TF) and the proprietary chemical (FTF) production processes at its Pittsburg California facility. The alteration involves removing the existing HCl absorption/abatement system and the HCl strorage tank in use at the TF plant, and rerouting the anhydrous HCl from the TF plant to the reaction/HCl absorption system at the FTF plant.

The alteration will not affect other equipment downstream of the reaction/HCl absorption system in the FTF process. The existing abatement systems at the FTF plant including the venturi scrubber and the caustic packed bed scrubber will provide adequate control of acid gas emissions.

Application No. 23595

Dow applied for an Authority to Construct to modify S-444 (U-183) Dowtherm Process Heater. The source had the burner replaced to meet Regulation 9, Rule 7 requirements. The installation of the new burner was considered a modification since the firing rate of S-444 will increase from 25 MMBtu/hour to 26.9 MMBtu/hour. Emissions of CO, POC, PM10, and SO2 will increase due to replacement of the burner and the increased firing rate. This application had an increase in emissions and required condition changes to condition 11054. The changes to the Title V permit associated with this application are considered a minor revision.

Application No. 23852

Dow Chemical Company (Dow) applied for an Authority to Construct to alter S-44 N-Serve Plant by replacing process vessel T-3 with a larger replacement process vessel. This application does not require any Title V permit revisions.

Emissions from S-44 did not change due to the replacement of T-3 process vessel. T-3 process vessel does not vent directly to atmosphere. The process vent streams from equipment downstream of T-3 are eventually vented through S-389 Symtet Halogen Acid Furnace or scrubbing systems within S-44. Fugitive emissions are expected to decrease due to a reduction of some component types in service.

Application No. 23934

Dow applied for a change of permit conditions for a carbon tetrachloride pressure storage tank S-680 and an associated truck transfer operation S-681. Dow requested this change in permit conditions to allow periodic inspections (every five years) or emergency repairs to be performed on S-680 (T-440) Pressure Vessel Storage Tank.

There are no emissions from S-680 during carbon tetrachloride storage. There are negligible emissions less than 2 lb/year of POC associated with the loading and unloading of carbon tetrachloride. Loading and unloading operations are abated by A-191 Vapor Balance System. This application required changes to condition 14354 and the associated changes to the Title V permit are considered a minor revision.

Title V Applications Submitted Since Last Title V Revision

Dow has submitted the following Title V permit applications since the last Title V permit revision. These are summarized in the following Table.

Title V Application No.	**Description**	**Title V Revision**	**Number of Sources**	**Issuance Date**
15211	Process Dryer Replacement, NSR Application No. 15133	Minor	1	Combine with Renewal
17126	MEI Plant Upgrade condition changes associated with NSR Application No. 14456	Minor	6	Canceled, combined with Renewal
18262	Title V Renewal Application	Significant	155	TBD
23414	Add HAP minor condition to Title V permit, Transfer Auxiliary Boiler from Calpine to Dow	Significant	155	Combine with Renewal
23596	Title V Revision for NSR Application No. 23595	Minor	1	Combine with Renewal
23934	Title V Revision for NSR Application No. 23934	Minor	1	Combine with Renewal
23985	Title V Revisions for all outstanding NSR Applications not covered by other Title V application	Minor		Combine with Renewal

Application No. 15211

This application is the Title V minor revision application associated with NSR application 15133. This application replaced a product dryer S-464 with an identical unit identified as S-465. S-465 is subject to condition 23250 which will be added to the Title V permit. The revision to the Title V permit is considered a minor revision.

Application No. 17126

This application was the Title V minor revision application associated with NSR application 14456 modification of the MEI Plant. This application was cancelled and the condition changes associated with NSR application 14456 modification of MEI plant will be included in the Title V renewal. The changes to the MEI plant permit condition 4780 are considered a minor revision.

Application No. 18262

Title V renewal application submitted by Dow in 2008.

Application No. 23414

This Title V application was submitted by Dow to add HAP minor condition to Title V permit. This application is associated with NSR application 17940. This application also adds S-1011Auxiliary Boiler formerly S-11 at Calpine Pittsburg to the Title V permit. Dow obtained control of S-1011 in March of 2010.

Application No. 23596

This Title V application was submitted by Dow to revise the Title V permit is association with NSR Application 23595. This NSR application allowed Dow to retrofit S-444 U-183 Dowtherm Heater with a new Low NOx burner at a slightly higher firing rate (26.9 MMBtu/hour from 25.0 MMBtu/hour) in order to meet Regulation 9, Rule 7. The heater retrofit required changes to permit condition 11054 and the associated revision to the Title V permit is considered a minor revision.

Application No. 23936

This Title V application was submitted by Dow to revise the Title V permit is association with NSR Application 23934. Dow requested this change in permit conditions to allow periodic inspections (every five years) or emergency repairs to be performed on S-680 (T-440) Pressure Vessel Storage Tank. The approval of this change in permit conditions required changes to permit condition 14354 and the associated revision to the Title V permit is considered a minor revision.

Application No. 23985

This Title V application was submitted by Dow to include all outstanding NSR applications (not covered by other Title V applications) into Title V permit. NSR Applications 14456, 14909, 17600, 18563, 19565, 21795, and 21858 are included under this Title V minor revision application.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, this section of the permit will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to the permit:

The rule applicability dates were updated in the permit. The basis for each condition was reviewed and updated as necessary.

Condition B.1 had the following text added to it.

If the permit renewal has not been issued by [ ], but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application.

Condition B.12 was added to the permit.

12. The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S prefix and a number (e.g., S-24). Permitted sources, listed in Table IIA, are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Significant

sources, listed in Table IIC, are those exempt sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed in Table IIB. Each abatement device whose primary function is to reduce emissions is identified by an A prefix and a number (e.g., A-24). If a source also acts as an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. Significant sources are also included in this section, even if they are not required to hold a District permit to operate.

Changes to the permit:

The main changes to Table II-A and II-B are the removal of shutdown equipment, the addition of a few new permitted sources, and the addition of exempt sources with a District source number to Table II-A. The previous Title V permit for the facility did not list the exempt sources in Table II-A. For Table II-B, several abatement devices were added that abate exempt sources, new abatement devices that have been added since the last Title V permit revision were also added to the Table, and finally the abate devices that have been shutdown were removed from the Table. Following are the differences in the permitted equipment list and the abatement device list from the draft Title V permit and the last permit revision:

Sources shutdown since last Title V permit revision and removed from Table II-A:

S-25, T-734 Material Flow Latex, Fixed Roof Tank
S-198, T-198 Latex Plant Process Recycle Tank
S-199, T-367 Latex Plant Process Tank
S-207, T-5 Latex Plant, Butadiene Storage Tank
S-208, T-6 Latex Plant, Butadiene Storage Tank
S-209, T-1 Latex Plant Styrene Storage Tank
S-222, T-3 Latex Plant Hydroxyethyl Acrylate Storage Tank
S-226, T-364 Latex Plant Process Tank
S-229, RM 1 Latex Plant Tank Car Unloading
S-345, T-1 Vikane Plant Storage Tank
S-421, T-368 Latex Plant Process Recycle Tank

S-449, T-30 Hydrochloric Acid Storage Tank
S-464, Plant 663 D-413 Dryer
S-489, B 100 Latex Still
S-490, B 310 Partial Condensor
S-491, T-363 Pressure Tank
S-507, Latex Plant Reactor R-100
S-588, Drum Filling Station
S-589, Product Recovery Tank T-203
S-638, Truck Mounted Bulk Transportable Pressure Tank X-205
S-675, Carbon Tetrachloride Railcar Storage
S-683, D-110A Storage Vessel
S-684, Dowicil Packaging System
S-704, Acrylonitrile Storage Tank D120-A

Sources permitted since last Title V permit revision (non-exempt sources) and added to Table II-A:

S-465, Plant 663 D-413 Product Dryer (application 15133)
S-483, Carbon Tetrachloride Rail Car Loading Rack (application 21795)
S-718, Nitrapyrin Formulation Plant (application 21858)
S-728, Ethylene Diamine Storage Tank (application 21858)
S-1011, Auxiliary Boiler (transferred source from Calpine Pittsburg to Dow)

Devices with Changed Permit Status:

S-401, B-901 Acid Adsorber, Hydrochloric Acid (this source was not in Table II-A, but is a permitted source)
S-428, H-300 Sym-Tet Processing (exempt per 2-1-123.3.2), Dow Custom Design, 25 feet X 15 feet (this source was in Table II-A of the existing Title V permit, but was not identified as exempt)
S-448, H-200 Sym-Tet (exempt per 2-1-123.3.2), Dow Custom Design, Separation/purification (this source was in Table II-A of the existing Title V permit, but was not identified as exempt)
S-710, Onan Standby Generator (exempt per 2-1-114.2.1) 50 bhp (this source was identified as a permitted source in Table II-A of the existing Title V permit, but was determined to be exempt)

Exempt sources added to Table II-A in Title V draft permit.

S-10, T-503A Material Flow
S-11, T-503B Material Flow
S-12, T-705 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
S-13, T-504B Material Flow
S-14, T-504C Paraffins
S-15, T 701 Wastewater (exempt 2-1-123.2)
S-16, T-702 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
S-17, T-703 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
S-18, T-704 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
S-21, T-507 Material Flow, n-methylpyrrolidine (exempt 2-1-123.3)
S-26, T-604B Glycols (exempt 2-1-123.3), Fixed Roof Tank

S-34, T-721 Inorganic Liquid (exempt), Fixed Roof Tank
S-37, T-771 Terminalized Products (exempt), Fixed Roof Tank
S-38, T-772 Terminalized Products (exempt), Fixed Roof Tank
S-46, T13 N-Serve (exempt) Fixed Roof Tank
S-47, T-18 N-Serve (exempt) Fixed Roof Tank
S-51, T-22 N-Serve (exempt) Pressure Tank
S-54, T-26 N-Serve (exempt) Pressure Tank
S-64, Heat Transfer Operation – Other (exempt), Natural Gas Fired
S-81, T-183 Sym Tet (exempt), Pressure Tank
S-154, T-616 Fresh Water Storage (exempt), Aqueous Materials Storage Tank
S-161, Maintenance Paint Booth M-1
S-164, Maintenance Exhaust Area M-2 (exempt)
S-167, Maintenance Welding Facility W-5 (exempt)
S-168, Maintenance Welding Facility W-6 (exempt)
S-170, Maintenance Paint Booth M-4
S-172, Maintenance Exhaust Area M-5 (exempt)
S-188, T-641 Aqueous Potassium Chloride (exempt)
S-189, T-642 Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank
S-190, T-643 Product Storage, Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank
S-191, T-664 Product Storage Glycols (exempt), Fixed Roof Tank
S-192, T-646A Material Handling (exempt), Fixed Roof Tank
S-193, T-646B Material Handling (exempt), Fixed Roof Tank
S-194, T-647 Feed Tank (exempt), Fixed Roof Tank
S-195, T-648 Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank
S-196, T-731 Material Handling Wastewater (exempt), Fixed Roof Tank
S-197, T-725 Terminalized Products (exempt), Fixed Roof Tank
S-210, T-8 Latex Plant Antioxidant Storage (exempt), Fixed Roof Tank
S-211, T-9 Latex Plant Antioxidant Storage (exempt), Fixed Roof Tank
S-212, Latex Plant Seed Latex Storage (exempt), Fixed Roof Tank
S-220, T-4 Sodium Lauryl Sulfate Storage (exempt), Fixed Roof Tank
S-224, T-31 Latex Tank Defoamer Storage (exempt), Fixed Roof Tank
S-225, T-45 Versonal Tank (exempt), Fixed Roof Tank
S-227, Bulk Plant (truck/rail), (exempt)
S-228, Bulk Plant (truck/rail), (exempt)
S-230, Bulk Plant (truck/rail), RM-2 Latex Plant Tank Car Unloading (exempt)
S-231, T-112 Latex Product Tank (exempt)
S-232, T-301A Latex Product Filter Feed (exempt), Fixed Roof Tank
S-233, T-302A Latex Product Filter Feed (exempt), Fixed Roof Tank
S-234, T-303A Latex Product Filter Feed (exempt), Fixed Roof Tank
S-236, T-301B Latex Product Filter Feed (exempt), Fixed Roof Tank
S-237, T-302B Latex Product Filter Feed (exempt), Fixed Roof Tank
S-238, T-303B Latex Product Filter Feed (exempt), Fixed Roof Tank
S-240, T-216 Latex Storage (exempt), Fixed Roof Tank
S-241, T-16 Latex Plant Dowfax Storage (exempt), Fixed Roof Tank
S-243, T-610 Latex Products (exempt), Fixed Roof Tank
S-245, T-520 Latex Products (exempt), Fixed Roof Tank

S-246, T-521 Latex Products (exempt), Fixed Roof Tank
S-247, T-522 Latex Products (exempt), Fixed Roof Tank
S-248, T-523 Latex Products (exempt), Fixed Roof Tank
S-249, T-524 Latex Products (exempt), Fixed Roof Tank
S-250, T-525 Latex Products (exempt), Fixed Roof Tank
S-251, T-526 Latex Products (exempt), Fixed Roof Tank
S-252, T-527 Latex Products (exempt), Fixed Roof Tank
S-253, T-528 Latex Products (exempt), Fixed Roof Tank
S-260, T-562 Latex Products (exempt), Fixed Roof Tank
S-261, T-563 Latex Products (exempt), Fixed Roof Tank
S-262, T-564 Latex Products (exempt), Fixed Roof Tank
S-263, T-565 Latex Products (exempt), Fixed Roof Tank
S-264, T-566 Latex Products (exempt), Fixed Roof Tank
S-265, T-567 Latex Products (exempt), Fixed Roof Tank
S-266, T-568 Latex Products (exempt), Fixed Roof Tank
S-268, T-4 Fumigants Storage, Inorganic Liquid (exempt), Pressure Tank
S-269, T-5 Fumigants Storage, Inorganic Liguid, Hydrogen Fluoride (exempt), Pressure Tank
S-299, T-113 Hydrochloric Acid Storage Tank (exempt)
S-301, T-103 Hydrochloric Acid Storage (exempt)
S-309, Heat Transfer Operation – Other (exempt 2-1-114.1.2), Natural Gas Fired
S-320, T-100 Teminalized Products, Ethers (exempt), Fixed Roof Tank
S-325, Dock Flush Tank, Fixed Roof Tank
S-327, T-602 Dock Recovery Tank, Wastewater (exempt), Fixed Roof Tank
S-373, Dowtherm Heat Exchange Fluid Storage (exempt), Pressure Tank
S-375, Heat Transfer Operation – Other (exempt 2-1-114.1.2), Natural Gas Fired
S-393, T-121 Water Storage (exempt), Fixed Roof Tank
S-423, T-301 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt), Fixed Roof Tank
S-424, T-302 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt), Fixed Roof Tank
S-425, T-303 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt), Fixed Roof Tank
S-426, T-304 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt), Fixed Roof Tank
S-435, T-126 N-Serve Distallation Vessel
S-439, T-306 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt), Pressure Tank
S-440, T-164 Sym-Tet Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank
S-441, T171E Sym-Tet Partially Chlorinated Heterocyclics (exempt), Pressure Tank
S-442, T-171C Sym-Tet Partially Chlorinated Heterocyclics (exempt), Pressure Tank
S-443, T-172 Sym Tet Pechlorinated heterocyclics (exempt), Fixed Roof Tank
S-450, T-32A Sodium Hydroxide Storage (exempt), Fixed Roof Tank
S-451, T-32B Sodium Hydroxide Storage (exempt), Fixed Roof Tank
S-468, T1-W Cylinder Loading Vikane (exempt), Pressure Tank
S-472, T-13A Vikane Storage (exempt), Pressure Tank
S-473, T-13B Vikane Storage (exempt), Pressure Tank

S-509, T-20 T-Dodecyl Mercaptan Storage (exempt), Pressure Tank
S-515, T-16A Anhydrous Hydrochloric Acid Storage (exempt), Pressure Tank
S-516, T-16B Anhydrous Hydrochloric Acid Storage (exempt), Pressure Tank
S-584, Drum Stations, Perchlorinated Heterocyclics (exempt)
S-602, Bulk Plant (truck/rail), Partially Chlorinated Heterocyclics (exempt)
S-606, T-602 Partially Chlorinated Heterocyclics Storage (exempt), Pressure Tank
S-618, Cooling Tower, Water (exempt)
S-622, Bulk Plant (Rail/Truck), Chlorinated Pyridine Truck Loading (exempt), Splash fill
S-623, T-650 Chlorinated Pyridine Storage (exempt), Pressure Tank
S-630, Liquid Chlorine Unloading Operation (exempt)
S-632, T-432 Wastewater Storage Tank (exempt)
S-653, Hydrochloric Acid Storage Tank (exempt)
S-674, H-350 Chlorinated Pyridine Purification Storage (exempt)
S-703, Degreaser (Cold Cleaner), Methylated Siloxane (exempt 2-1-118.4)
S-713, Process Tank, Hydrogen Fluoride (exempt)
S-714, T-70 Process Tank, Sulfuryl Fluoride (exempt)
S-715, T-72 Process Tank Sulfuryl Fluoride (exempt)
S-716, Furnace, U-3 First Stage Incinerator (exempt 2-1-114.1.2), Natural Gas Fired
S-717, Furnace, U-1 First Stage Incinerator (exempt 2-1-114.1.2), Natural Gas Fired
S-719, Aromatic 200 Storage (exempt), Pressure Tank
S-720, T-310 Organic Mix Tank (exempt), Fixed Roof Tank
S-721, D-110A Organic Liquid Storage Tank (exempt), Pressure Tank
S-722, T-8 Tergitol Storage Tank (exempt), Pressure Tank
S-723, T-9 Tergitol Storage Tank (exempt), Pressure Tank
S-724, T-15 Propylene Glycol Storage (exempt), Fixed Roof Tank
S-725, V-250 Aqueous Tank (exempt), Fixed Roof Tank
S-726, Dipropylene Glycol Monomethyl Ether Storage (exempt), Fixed Roof Tank
S-727, Gel Phase Mix Tank (exempt), Fixed Roof Tank
S-729, Dipropylene Glycol Monomethyl Ether Storage (exempt), Fixed Roof Tank
S-730, Dipropylene Glycol Monomethyl Ether Storage (exempt), Fixed Roof Tank
S-731, Dipropylene Glycol Monomethyl Ether Storage (exempt), Fixed Roof Tank
S-732, T-16 Storage Tank, Water/Organics Mixture (exempt), Fixed Roof Tank
S-733, T-216 Storage Tank, Dipropylene Glycol Monomethyl Ether Storage (exempt), Fixed Roof Tank

Abatement Devices added to Table II-B in Title V draft permit.

A-24, Maintenance Dynamic Cyclone abating S-164 (exempt 2-1-128.1)
A-26, Maintenance Two Stage Electrostatic Precipitator abating S-167 (exempt 2-1-128.1)
A-27, Maintenance Two Stage Electrostatic Precipitator abating S-168 (exempt 2-1-128.1)
A-125, Vapor Recovery System abating S-321, S-322, S-323, S-324, S-535 (A-336 downstream), existing abatement device not listed in previous Title V permit.
A-139, Venturi Scrubber abating S-584, existing abatement device not listed in previous Title V permit.
A-155, Vapor Return for Truck Loading Facility – vapor balance abating S-602 (exempt source, vents to S-606)

A-169, B-32 Caustic Scrubber – packed bed scrubber abating S-450 and S-451, existing abatement device not listed in previous Title V permit.
A-196, X 523 Venturi Scrubber abating S-694, existing abatement device not listed in previous Title V permit.
A-201 Venturi Scrubber X-100 was identified as a Future Abatement Device, this device has been installed.
A-202 Caustic Scrubber B-105 was identified as a Future Abatement Device, this device has been installed.
A-203 Carbon Adsorber was identified as a Future Abatement Device, this device has been installed.
A-204 Sulfuryl Fluoride Recovery System was identified as a Future Abatement Device, this device has been installed.
A-205, R-503 Carbon Monoxide Scrubber abating S-389, (Downstream of A-74, A-75, A-76, A-80, A-77, A-147, A-149), this is a new abatement device permitted under application 18563.
A-1011, Selective Catalytic Reduction System abating S-1011, this abatement device was transferred with S-1011.

Abatement Devices removed from Table II-B in Title V draft permit.

A-46, B-7 Caustic Scrubber at Vikane, packed bed scrubber.
A-90, H-30 Acid Absorber
A-91, B-30 Absorber
A-101, H-205 Falling Film Absorber
A-102, B-206 Scrubber
A-142, Vapor Balance System abating S-588
A-151, Vapor Balance System abating S-25
A-193, Cartridge Dust Collector System abating S-684
A-197, B-4 Caustic Scrubber abating S-268, S-269, S-454

Other Changes to Table II-B

A-97, B-201 Organic Scrubber does not abate S-474 anymore and Table II-B has been amended.
A-99, B-203 Scrubber exhaust is now routed to S-694 Reaction/HCL Absorption System and Table II-B has been amended.
A-114, Vacuum System with Condenser, now abates S-465 (replacement to S-464) in Table II-B. The condition S-465 is subject to has been identified as 23250 (S-464 was previously subject to Condition 1359).

District permit applications not included in this proposed permit

Review of the following permit applications was not completed in time to include the results in this Title V permits. The Title V permit will be revised periodically to incorporate these applications as permit revisions following the procedures in Regulation 2, Rule 6, Major Facility Review.

Application #	Project Description
None	

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1 and are identified in Table II-A. The *significant sources* pursuant to the definition in BAAQMD Rule 2-6-239 are identified in Table II-B

Changes to the permit:

Table III Generally Applicable Requirements was revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to the facility as shown below:

Action	Title/Description
Revised Effective Dates for BAAQMD Rules and Regulations. Verified federal enforceability status for each requirement listed in Table III.	Adoption dates of District Rules need to be updated. SIP Rules need to have effective dates revised.
Added SIP Version of Regulation 2-1-429	Federal Emissions Statement
Added BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements
Added SIP Regulation 6	Particulate Matter and Visible Emissions
Added SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations
Removed SIP Regulation 8, Rule 4	Organic Compounds – General Solvent and Surface Coating Operations
Added SIP Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks
Added SIP Regulation 8, Rule 47	Organic Compounds – Air Stripping and Soil Vapor Extraction Operations
Added California Health and Safety Code Section 41750 et seq.	Portable Equipment
Added California Health and Safety Code, Title 17, Section 93115	Airborne Toxics Control Measure for Stationary Compression Ignition Engines
Added California Health and Safety Code Title 17, Section 93116	Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are "federally enforceable" and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations of *all* applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. The District's policy is to not include citations of exemptions as applicable requirements. Therefore, where no regulation applies to a specific operation due to one or more exemptions under the potentially applicable regulations, the source will not be included in Sections IV and VII of the permit unless specific permit conditions apply. All monitoring and recordkeeping requirements are also cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section VII of this permit evaluation/statement of basis.

Complex Applicability Determinations

The sources at this facility fall into the following categories:

- Loading/Unloading Operations,
- Production Plants (reactors, product purification, intermediate storage),
- Combustion Devices,
- Storage Tanks,
- Miscellaneous support operations;
- Components (fugitive emissions)

Loading/Unloading Operations: Dow unloads and loads a variety of products including inorganic acids and inorganic gases, organic compounds, and many materials exempt from District regulation due to low vapor pressure (< 0.5 psia). For the subset of these sources that handle inorganic acids exclusively, only Regulation 6, the particulate emission standards, apply due to potential emissions of acid mist. Transfer of liquefied inorganic gases, such as chlorine

and sulfur dioxide, is exempt from District permit requirements under Regulation 2-1-123.3.1. Exempt source are only listed in this section of the Title V permit if they are subject to a District permit condition.

For the operations that load and/or unload organic compounds, there are two types of operations – those that handle terminalized products and those that exclusively handle non-terminalized products. Terminalized products are products that are brought into the facility, terminalized in storage, and then shipped out to a customer. In addition to this, Dow has several loading/transfer operations involving products that are either brought onsite and used in a manufacturing process or only transferred internally (generated onsite, transferred for use at a different location onsite). These operations include transfer operations in this category which exclusively handle low vapor pressure materials as defined in Regulation 8, Rule 6: S-604 transferring a wastewater stream, and S-699 transferring a purge stream from the AFTF (fluorinated pyridine) process unit.

Regulation 8, Rule 6 applies to "transfer operations at non-gasoline organic liquid bulk terminals and bulk plants" (Section 8-6-101, 2/2/94). Dow is a bulk plant under the definition in Section 8-6-201, 2/2/94:

> *"… **any storage and distribution facility that receives organic liquid by pipeline, railcar, and/or delivery vehicle; stores it in stationary tanks**; and/or mixes it in blending tanks; and/or loads it into delivery vehicles or transportable containers, for delivery to distributors, marketers or any product end user; **and which has an annual throughput of not more than 22,710 cubic meters (6,000,000 gallons)** …"*

As the rule is currently written, the qualifications "*mixes it in blending tanks"* and *"loads it into delivery vehicles or transportable containers, for delivery to distributors, marketers or any product end user"* are not required elements that define a bulk plant. Further, as the term "transfer operations" is not defined to exclude non-terminalized products, the current interpretation of the regulation is that *all* transfer operations at a bulk plant or terminal are subject to Regulation 8, Rule 6, regardless of the type of products being transferred. Therefore, the District believes loading operations at a bulk plant or bulk terminal that transfer either terminalized or non-terminalized products are subject to Regulation 8, Rule 6.

Loading operations that are subject to Regulation 8, Rule 6, but exempt from the rule due to low vapor pressure (Section 8-6-110), do not become subject to Regulation 8, Rule 2. Regulation 8, Rule 2 regulates miscellaneous operations defined in Section 8-2-201, 7/20/05 as:

> *"Any operation other than those limited by the other Rules of this Regulation 8 and the Rules of Regulation 10."*

The District has determined that this definition excludes sources that are in a source category regulated by another rule in Regulation 8, even if those sources have been exempted from the other rule. This is due to the fact that the District considered appropriate controls for the source category when it adopted the rule governing that category, and part of that consideration included determination of sources and activities not subject to control, as such sources are limited by the terms of the exemption.

Production Plants: The emissions from these operations consist primarily of acid, which may be in the form of acid vapor or acid mist, and organic compounds. Acid mist emissions are defined as particulate emissions and are therefore subject to Regulation 6, Rule 1. Sources of organic emissions are subject to the requirements in a specific Regulation 8 rule or to the

requirements of Regulation 8, Rule 2, except for those operations meeting the exemption criteria in Regulation 8, Rule 1, Section 110.3, 3/17/82:

> *"Any operation or group of operations which are related to each other by being a part of a continuous process, or a series of such operations on the same process material, which are subject to Regulation 8, Rule 2 or Rule 4, and for which emissions of organic compounds are reduced at least 85% on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide."*

The operations with organic emissions meeting these criteria are "*exempted from the provisions of this regulation*" and are therefore not subject to the requirements of any other rule in Regulation 8.

New Sulfuryl Fluoride Plant

Dow has built a new Sulfuryl Fluoride Plant to replace the former Vikane® Plant. Sulfuryl fluoride (SO2F2) is used as a fumigant for dry wood termite control. Sulfuryl fluoride is produced from sulfur dioxide (SO2), chlorine gas (Cl2), and hydrogen fluoride (HF) in a continuous system. Hydrochloric acid (HCl) is produced as a byproduct. Chlorine is consumed in the reaction, so the exhaust stream from the reaction is expected to contain SO2, HF, HCl, and sulfuryl fluoride.

Sulfuryl fluoride is an inorganic gas and emissions of this gas are not regulated under any specific District regulation. However, one of the reactants in the sulfuryl fluoride process is sulfur dioxide, which is unloaded and stored onsite in liquid form. Regulation 9, Rule 1, Inorganic Gaseous Pollutants - Sulfur Dioxide, has been listed as a specific applicable requirement for the source that handles the liquid sulfur dioxide, S-268.

S-268, Fumigants Closed Pressurized Storage Tank T-4 (exempt – liquefied SO2 storage)
S-269, Fumigants Closed Pressurized Storage Tank T-5 (exempt – liquefied HF storage)
These are feed tanks for the process. The raw materials are shipped to the site by rail. Chlorine is unloaded from railcars through a surge tank to the chlorine distribution system. Chlorine is delivered by pipeline to this process from the chlorine distribution system. HF and SO2 are offloaded from rail cars into these two pressure tanks by pipeline. SO2 and HF are then also delivered to the reactor train from these tanks by pipeline.

Storage Tank T-10 (exempt – liquefied HF storage)
This will be a new exempt feed tank associate with the process. The raw material offloading and delivery process will remain the same, except the SO_2 and HF tanks will be vented to two new abatement devices, A-201 Venturi Scrubber followed by the A-202 Caustic Scrubber, during railcar unloading.

S-712, SF Plant
A-201, Venturi Scrubber
A-202, Caustic Scrubber

S-712 is new and consists of a reaction section, purification section, and recovery section. During reactor loading, start-up, shut-down, or malfunction, the reactors are vented to the recovery section, where the process vent steams condense any recoverable SO_2F_2, followed by

A-201 and A-202. A small continuous purge stream from the final distillation column is also delivered to the recovery section.

The recovery section, raw material tanks, pressure relief valves, and distillation section purge stream are vented to the A-201 Venturi Scrubber and then to the A-202 Caustic Scrubber to eliminate any remaining Cl_2, SO_2, HF, HCl, or SO_2F_2. If the recovery section is not operating, the reactors, product storage tanks, and cylinder operations are vented directly to A-201 followed by A-202. This new operation will be subject to the same regulations as the existing production plant it is replacing.

The byproduct HCl stream is delivered to an exempt storage tank and purification section, then delivered to the hydrochloric acid recovery section of the S-434 Manufacturing Services Plant. The purified sulfuryl fluoride will be delivered to the two existing exempt product storage tanks and two new exempt product tanks. Emissions from these tanks are vented to the SF recovery section.

The previous Title V permit listed 40 CFR, Part 63, Subpart NNNNN (NESHAP for Hydrochloric Acid Production as an applicable requirement. Subpart NNNNN does not apply to the Sulfuryl Fluoride Plant. Subpart NNNNN only applies to sources producing aqueous HCl product at a concentration of 30 weight percent or greater (63.8985(a)). The Sulfuryl Fluoride Plant only produces anhydrous hydrogen chloride and therefore Subpart NNNNN does not apply.

Dow has abated several operations that were previously unabated as part of the new sulfuryl fluoride plant:

- Emissions from the paint booth, S-308, were previously unabated, are captured and vented to the new A-203, Carbon Adsorber.
- Cylinder filling at S-311 was previously unabated but is currently vented to the SF recovery section until the pressure is 23 psia or less.
- The S-312 Cylinder Depressurization Operation, was previously vented to the atmosphere, is currently vented to the SF recovery section until the pressure is 23 psia or less.

These modifications to the existing source operations have been completed and are included in the draft Title V permit.

S-308, Fumigants Cylinder Paint Hood C-11
S-311, Fumigants Gas Cylinder Handling Area C-9
S-312, Fumigants Cylinder Valve Removal Area Dow C-8
S-314, Fumigants Paint Booth F-2
S-705, Shot Blast Unit

Sulfuryl fluoride is packaged for sale in pressurized gas cylinders. New and empty recycled cylinders are cleaned and painted to prepare them for filling. If necessary, the cylinders are blast cleaned at the existing S-705 Shot Blast Unit, which is subject to Regulation 6, Rule 1. All cylinders must be painted or repainted with new warning labels prior to filling. Painting is

conducted at S-308 and S-314. These booths are subject to Regulation 8, Rule 19, Organic Compounds – Surface Coating of Metal Parts and Products.

The cleaned and painted cylinders will be filled at the existing S-311 Cylinder Filling Operation. Sulfuryl fluoride is delivered by pipeline to S-311 from the product storage tanks. No emissions occur during cylinder filling, but the fill hose must be emptied prior to connecting to the next cylinder. Currently, this hose is vented directly to the atmosphere.

Dow must occasionally conduct a pressurized water test or "hydro-test" on the cylinders to verify cylinder integrity. Prior to filling a cylinder with water, the cylinder must be depressurized. Currently, the cylinder is opened under a hood (S-312 Cylinder Depressurization Operation) and all the SO_2F_2 is vented to the atmosphere. Sulfuryl fluoride is an inorganic gas, and emissions of this gas are not regulated under any specific District regulation, therefore these operations are subject to no emission standards from District regulations.

Dowicil® Production: Dowicil® is a solid (powder) preservative and antimicrobial used in hand lotions and other products. Dowicil® is produced by reaction of a solid amine and dichloropropene, a chlorinated alkene (VOC), in methylene chloride. There are no byproducts from this reaction. Emissions from the operation include VOC (chlorinated alkene), methylene chloride, and particulate matter.

S-580, T-3A Specialty Chemicals Storage Tank
S-581, T-3B Specialty Chemicals Storage Tank
S-582, T-215 Specialty Chemicals Storage Tank
S-583, T-200 Specialty Chemicals Storage Tank
The alkene is delivered to the site by rail car and hard-piped to these pressure vessels for storage. The material is hard-piped from these vessels to the reactors. They are subject to Regulation 8, Rule 5.

S-662, Storage Tank T-243
S-663, Storage Tank T-242
S-664, Storage Tank T-244
These tanks store methylene chloride for delivery to the reaction process, S-302 and S-303. They are subject to Regulation 8, Rule 5.

S-302, Fungicides Product Dryer and Collector D-201A
S-303, Fungicides Product Dryer and Collector D-201B
S-389, Sym-Tet Thermal Oxidizer
S-496, T-241 Storage Tank Specialty Chemicals
A-192, Vent Recovery System
Dowicil® is produced at S-302 and S-303, which are abated by A-192 to remove the methylene chloride from the vent stream by refrigeration. The methylene chloride is stored at S-496. A-192 is followed by abatement at S-389, if the Thermal Oxidizer is operating. S-302 and S-303 are not subject to any District regulation. Regulation 8, Rule 2 applies to miscellaneous operations, but only those operations which result in precursor organic compound emissions. Methylene chloride is a non-precursor organic compound, therefore this regulation does not

apply. S-496 receives the methylene chloride recovered from the process and is subject to Regulation 8, Rule 5.

S-322, D203A/B Portable Dryers
S-631, D-203C Portable Resin Drier
These dryers are used to remove water from the methylene chloride before it is used as a solvent in the Dowicil® process. They are not subject to any District regulation. Regulation 8, Rule 2 applies to miscellaneous operations, but only those operations which result in precursor organic compound emissions. Methylene chloride is a non-precursor organic compound, therefore this regulation does not apply.

40 CFR Part 63, Subpart VVVVVV, National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: The Dowicil® plant at is subject to Subpart VVVVVV since it meets the applicability criteria in 63.11494(a). 1,3-dichloropropene and methylene chloride are listed in Table 1 of this subpart and is present in the process fluid at concentrations greater than 0.1 percent for carcinogens and greater than 1.0 percent for noncarcinogens.

Subpart VVVVVV has requirements for process vents, storage vessels, and transfer operations.

Former Latex Plant
This plant has been shutdown. There are a few sources that Dow maintains permits for that were associated with the old Latex Plant.

S-586, T-371 Recycle Tank
S-587, Tank Truck Loading at Latex for Recycle Styrene
A-42, B-368 Latex Plant Styrene Scrubber
S-587 loads unrecycleable styrene/butadiene from S-586 at the Latex Process into a tank truck for shipping offsite. The operation is also vented to the A-42 Latex Vent Recovery System, followed by incineration at S-336. S-586 is subject to Regulation 8, Rule 5. The loading operation is regulated under Regulation 8, Rule 6.

Hydrochloric Acid Production: Hydrochloric acid is produced at the Catalytic Hydrogen Chloride Plant, S-647, by conversion of carbon tetrachloride (a byproduct from the Sym-Tet Plant, S-446). It is also produced as a byproduct of several other manufacturing processes (the Sym-Tet Plant, the Sulfuryl Fluoride Plant, the N-Serve® Plant, the Lontrel Plant, the Trifluoro Plant), and by combustion of chlorinated compounds in the waste streams that are vented to the S-336, Manufacturing Services Thermal Oxidizer and S-389, Sym-Tet Thermal Oxidizer. All of the sources in acid service are subject to Regulation 6, Rule 1 for potential emissions of acid mist, in addition to any other regulations indicated.

The Catalytic Hydrogen Chloride process:
S-429, T-130A Environmental Services
S-431, Carbon Tetrachloride Pressure Vessel D-260A
S-432, Carbon Tetrachloride Pressure Vessel D-260B
S-506, T-404 Storage Tank Environmental Services

Carbon tetrachloride from the Sym-Tet Plant, S-446, is stored at S-429, S-431, S-432, and S-506 prior to conversion at the Catalytic Hydrogen Chloride Plant. These tanks are subject to Regulation 8, Rule 5.

S-647, Catalytic Hydrogen Chloride Plant
S-648, E-277 HCl Absorber
S-649, T-277 36% HCl Storage Tank
S-650, T-280A 36% HCl Storage Tank
S-651, T-280B 36% HCl Storage Tank
S-652, T-280C 36% HCl Storage Tank
A-181, Water Scrubber
A-182, Water Scrubber
Carbon tetrachloride from S-431 and S-432 is delivered to the Catalytic Hydrogen Chloride Plant, S-647, where the carbon tetrachloride is converted to anhydrous hydrogen chloride. Emissions from S-647 include carbon tetrachloride and carbon dioxide, CO2. The vent stream from the Catalytic Hydrogen Chloride Plant (anhydrous HCl) is then forwarded through S-648, the HCl absorption system, to recover HCl in the form of 36% HCl. All of the recovered HCl is forwarded first to S-649, a receiving tank, then to S-650, S-651, and S-652 check tanks which are vapor balanced back to S-649. Any residual HCl vapors in the vent stream and the vent from S-649 are then directed to A-181 and A-182, Water Scrubbers, in series to ensure complete removal of HCl. The vent stream is then sent to the primary abatement device, S-336 Thermal Oxidizer, or through carbon beds to the atmosphere (P-264). The Catalytic Hydrogen Chloride Plant is subject to Regulation 8, Rule 2 for organic emissions. S-648 is subject to Regulation 6 due to potential emissions of acid mist. S-649 through S-652 are also subject to Regulation 6, however, due to the vapor balancing, the emissions from S-650, S-651, and S-652 are directed back to S-649. Therefore, S-649 is expected to be the only source of emissions.

HCl from the N-Serve® Plant, S-44, and the Sym-Tet Plant, S-446:
S-515, T-16A Anhydrous HCl Storage at Block 660 (exempt)
S-516, T-16B Anhydrous HCl Storage at Block 660 (exempt)
The anhydrous HCl produced as a byproduct at the N-Serve® and Sym-Tet plants is stored in the exempt pressure vessels, S-515 and S-516. The anhydrous HCl is then forwarded to either A-87/A-85 auxiliary HCl Absorption System or the acid absorption system at S-434, Manufacturing Services Facility, to produce aqueous HCl. These sources are subject to Regulation 6.

HCl from the Trifluoro Plant, S-474:
The HCl produced as a byproduct at the Trifluoro Plant, S-474, is sent to A-98, B-202 Reactor Vent Scrubber, followed by A-99, B-203 Scrubber as the primary system, followed by S-694 Reaction/HCL Absorption System, followed by A-196, X-523 Venturi Scrubber, followed by A-195, B-615 Scrubber.

HCl from the Lontrel Plant, Plant 663:
The Lontrel Plant produces 20% by weight HCl, which is exempt from permit requirements. The 20% HCl is stored in exempt tanks T-426A and T-426B.

S-336, Manufacturing Services Thermal Oxidizer
S-135, HCl Storage Tank T-606A

S-136, HCl Storage Tank T-606B
The HCl recovered from the Manufacturing Services Thermal Oxidizer is sent to S-135 and S-136 for storage.

S-389, Sym-Tet Thermal Oxidizer
S-301, T-103 (exempt)
S-519, T-502A
S-520, T-501B
Chlorinated pyridine is stored at S-519 and S-520 prior to being fed to S-389. The Sym-Tet Thermal Oxidizer produces aqueous 20% HCl, which is stored in exempt check tanks T-510A and T-510B, then in exempt storage tank S-301, T-103.

S-4, HCl Rail Tank Car Loading, Central Rail Loading Rack, Acid TC-1
S-620, HCl Truck Loading Operation
S-646, 36% Hydrochloric Acid Tank Truck Loading Operation
The HCl is loaded from the storage tanks for delivery to customers at S-4, Rail Tank Car Loading and at S-620 and S-646, Tank Truck Loading Operations.

S-137, HCl Storage Tank T-606C
S-138, HCl Storage Tank T-606D
S-139, HCl Storage n Tank T-606E
S-140, HCl Storage Tank T-606F
S-530, T-902 HCl Storage Tank (36%)
These storage tanks are permitted to store 36% HCl. The acid comes from various processes at Dow that produce HCl and is all transferred to these tanks by pipeline. S-140 is currently storing water, but has the option to be converted back to acid service at any time. S-530 is currently out of service, but could also be put into acid service at any time. The sources are subject to Regulation 6, Rule 1 for potential acid mist emissions.

40 CFR Part 63, Subpart NNNNN, National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production (HCl MACT): Some of the operations related to HCl production are also subject to the HCl MACT. These sources include:

S-137, HCl Storage Tank T-606C
S-138, HCl Storage Tank T-606D
S-139, HCl Storage n Tank T-606E
S-140, HCl Storage Tank T-606F
S-434, Manufacturing Services Facility -HCl Absorber Systems
S-576, HCl Storage Tank, T-122
S-620, HCl Truck Loading Operation
S-646, HCl Tank Truck Loading Operation
S-647, Catalytic Hydrogen Chloride Plant

Subpart NNNNN has been included in the applicable requirements for each of these sources.

Subpart NNNNN is a NESHAP for hydrochloric acid (HCl) production facilities. The rule defines an HCl production facility as the collection of equipment used to produce, store, and transfer for shipping HCl at a concentration of 30 percent by weight or greater. An HCl

production facility is any process that routes a gaseous stream that contains HCl to an absorber, thereby creating a liquid HCl product.

Subpart NNNNN emissions standards apply to the following types of emission points:

- HCl process vents: Chlorine > 99 percent emissions reduction or outlet concentration <100 ppmv, HCl > 99 percent emissions reduction or outlet concentration <20 ppmv;
- HCl storage tanks: HCl > 99 percent emissions reduction or outlet concentration <120 ppmv;
- HCl transfer operations: HCl > 99 percent emissions reduction or outlet concentration <120 ppmv; and
- Leaks from equipment in HCl service.

The process units or plants that produce anhydrous HCl and not subject to Subpart NNNNNN because no aqueous HCl is produced are the Sulfuryl Fluoride plant and Chlorpyridines plant (Alpha and Beta). The plants that produce aqueous HCl at less than 30 wt% are Trifluoro (TF) and proprietary chemical (FTF) and therefore these units are not subject to Subpart NNNNN.

Plants subject to NNNNN are the Hydrochloric Acid Absorption plant at Manufacturing Services with A-199 or S-336 as the control device, Multiple (T-606's) large 36% HCl storage tanks that vent to A-18 (B-607), Railcar loading rack that vents to S-336 and S-389, S-620 HCl tank truck self-loader that vents to A-165 (B-480), and Catacid plant with S-336 as the control device.

Subpart NNNNN requires an affected process unit or plant to demonstrate compliance with the emission limitations under this regulation by: design evaluation or a performance test. The Subpart also requires each affected source to establish operating limits to demonstrate continuous compliance with applicable emission limits. Operating parameter must be monitored by continuous monitoring systems that must be operated in accordance with the Subpart.

The compliance demonstration used by each source subject to Subpart NNNNN is shown below:

- S-137, HCl Storage Tank T-606C, HCl absorber design evaluation
- S-138, HCl Storage Tank T-606D, HCl absorber design evaluation
- S-139, HCl Storage n Tank T-606E, HCl absorber design evaluation
- S-140, HCl Storage Tank T-606F, HCl absorber design evaluation
- S-434, Manufacturing Services Facility -HCl Absorber Systems, performance test
- S-576, HCl Storage Tank, T-122, performance test
- S-620, HCl Truck Loading Operation, HCl absorber design evaluation
- S-646, HCl Tank Truck Loading Operation, HCl absorber design evaluation
- S-647, Catalytic Hydrogen Chloride Plant,

T-122 is considered process equipment that is part of the HCl absorption facility. Performance testing was used to demonstrate HCl absorption system process vent met Subpart NNNNN emissions requirements.

Control device is MS HAF which is exempt from performance demonstration since MS HAF is a permitted RCRA Industrial Furnace.

EPA has recently promulgated changes to the following NESHAP standards that apply to chromium electroplating and steel pickling operations.

Chromium Electroplating NESHAP, Subpart N
Steel Pickling—HCl Process Facilities And Hydrochloric Acid Regeneration Plants NESHAP, Subpart CCC

The District has confirmed that neither of these revised standards applies to this facility. Dow does not operate any electroplating operations and Subpart CCC only applies to HCl process facilities and hydrochloric acid regeneration plants associated with steel pickling operations.

Chlorpyridines Plant: The N-Serve® and Sym-Tet production processes, called the chlorpyridines plant, are very similar and described below. They have some equipment in common and can produce different ratios of the same materials.

N-Serve® Production*:* N-Serve® is an agricultural product, which is applied with fertilizer to keep the nitrogen in the fertilizer available to the plant roots for a longer time. The raw materials to the process are picoline (methyl pyridine) and chlorine. The product is a chlorinated heterocyclic, or chlorinated pyridine. HCl is a byproduct of this reaction.

S-36, T-722 N-Serve® Plant Storage
S-44, N-Serve® Plant
S-48, T19A N-Serve®
S-49, T19B N-Serve®
S-56, T-31 N-Serve®
S-383, Petroleum Hydrocarbon Distillate Tank T-724
S-389, Sym-Tet Thermal Oxidizer
S-515, T-16A Anhydrous HCl Storage at Block 660 (exempt)
S-516, T-16B Anhydrous HCl Storage at Block 660 (exempt)
S-630, Liquid Chlorine Unloading Operation (exempt)
S-674 Chlorinated Pyridine Purification System H-350 (exempt)
The chlorine is received onsite, unloaded from railcars at exempt source S-630 and delivered to S-44 from the chlorine distribution system. The picoline is unloaded next to the S-5 loading rack, is stored in S-36 and delivered to the plant by pipeline. S-56 and S-383 also contain solvent used to make N-Serve®. S-48 and S-49 are in-process storage tanks.

The plant consists of reaction, purification, and process recovery sections. The anhydrous HCl byproduct is sent directly from the reaction system to the exempt tanks S-515 and S-516, which are abated by S-434 or A-87/A-85. The product is sent to the distillation section, which is abated by the Thermal Oxidizer, S-389, as the primary abatement system. The backup abatement system is the Process Recovery section, which is abated by A-88 or A-89. The potential particulate emissions (acid mist) from S-44 are subject to Regulation 6, Rule 1 and the organic emissions to Regulation 8, Rules 2 and 10. S-36, S-48, S-49, S-56, and S-383 are subject to Regulation 8, Rule 5.

S-57, T-32 N-Serve®
S-61, T-780 N-Serve®

S-62, T-781 N-Serve®
S-63, T-782 N-Serve®
S-382, N-Serve® Unit Storage T-783
S-407, T-728 N-Serve® Formulation Tank
These tanks are used to store the N-Serve® product or product stabilizer and are subject to Regulation 8, Rule 5. Not all of these tanks are currently in service.

Sym-Tet Production: A variety of chlorinated pyridine products, including symmetrical tetrachloropyridines, are produced by the chlorination of picolines in continuous processes. The reactants include chlorine gas and picolines. Hydrogen chloride gas and carbon tetrachloride are byproducts of the process.

S-45, T-1 N-Serve®
S-447, T-774
S-498, Sym Tet T-102 Storage Tank
S-680, T-440 Pressure Vessel Storage Tank
S-681, Truck Transfer
S-45, S-447, and S-498 store the organic feed material. These tanks are subject to Regulation 8, Rule 5. The carbon tetrachloride from S-680 is delivered to the Sym-Tet Plant by tank truck, S-681, if needed for use in the utility system. S-681 is subject to Regulation 8, Rule 6. Chlorine is delivered to the site in railcars. The chlorine is delivered to this process via a surge tank followed by the chlorine distribution system header. After the chlorine and picoline are reacted, the reaction mixture of chlorinated pyridines is forwarded for purification.

S-446, Sym-Tet Plant
S-423, Sym-Tet T-301
S-424, Sym-Tet T-302
S-425, Sym-Tet T-303
S-426, Sym-Tet T-304
S-439, T-306 Sym-Tet
S-441, T-171E Sym-Tet
S-442, T-171C Sym-Tet
S-389, Sym-Tet Thermal Oxidizer, R-501
S-428, H-300 Sym-Tet Processing
S-448, H-200 Sym-Tet
S-515, T-16A Anhydrous HCl Storage at Block 660 - exempt
S-516, T-16B Anhydrous HCl Storage at Block 660 - exempt
S-674, Chlorinated Pyridine Purification System H-350 – exempt
S-703, T-300 - exempt
The Sym-Tet Plant, S-446, consists of reactors, in process tanks, and separation systems. After reaction, the products are purified at S-428 and S-448 and send for storage. The exempt pressure vessel, S-674, is a purification system that is used to purify chlorinated pyridines for use at the Lontrel Plant.

This plant is abated in the same manner at the N-Serve® Plant above, with S-389 the primary abatement system and a process recovery section abated by A-88 or A-89 as backup. The HCl byproduct is sent to the exempt storage tanks, S-515 and S-516, which are abated by S-434 or A-

87/A-85. Any particulate emissions in the form of acid mist from the Sym-Tet Plant, S-446, are subject to Regulation 6, Rule 1 and the organic emissions are subject to Regulation 8, Rules 2 and 10. Regulation 8, Rule 10 does not apply to S-428 or S-448 since they are never operated above 1 psig and are vented to an abatement device at all times. The separated chlorinated pyridines produced from this process are stored in exempt tanks.

S-429, T-130A Environmental Services
S-431, Carbon Tetrachloride Pressure Vessel D-260A
S-432, Carbon Tetrachloride Pressure Vessel D-260B
S-506, T-404 Storage Tank Environmental Services
Carbon tetrachloride from the Sym-Tet Plant, S-446, is stored at S-429, S-431, S-432, and S-506 prior to conversion at the Catalytic Hydrogen Chloride Plant. These tanks are subject to Regulation 8, Rule 5.

S-444, U-183 Dowtherm Heater
S-460, U-83 Dowtherm Burner
S-444 and S-460 are natural gas fired process heaters used to heat Dowtherm G®, a heat transfer fluid that is used in the S-44 N-Serve® and S-446 Sym-Tet Plants and in the purification systems associated with S-44 and S-446. They are subject to the regulations for combustion devices, Regulation 6, Rule 1, Regulation 9, Rules 1 and 7. They are not subject to Regulation 8, Rule 2, which exempts natural gas operations.

S-440, T-164 Sym-Tet
S-443, T-172 Sym-Tet
These tanks are used to store the product and are subject to Regulation 8, Rule 5.

40 CFR Part 63, Subpart VVVVVV, National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: The Beta process at the Sym-Tet Plant (S-446) manufactures intermediate products for agricultural applications. The intermediate products are converted/formulated into finished agricultural products within the Pittsburg facility or at other Dow locations. The Beta process produces a variety of chlorinated pyridine products by the chlorination of picolines in continuous processes. Hydrogen chloride gas and carbon tetrachloride are co-products of the chlorination reactions. Low levels of hexachlorobenzene are formed during the production of the intermediate products. All emissions from these processes are controlled using scrubbers and/or thermal treatment.

The Beta process at S-446 is subject to Subpart VVVVVV since it meets the applicability criteria in 63.11494(a). Hexachlorobenzene is listed in Table 1 of this subpart and is present in the process fluid at concentrations greater than 0.1 percent for carcinogens and greater than 1.0 percent for noncarcinogens. EPA has defined hexachlorobenzene as a probable human carcinogen (Group B2, See http://www.epa.gov/ttn/atw/hlthef/hexa-ben.html for more information).

Subpart VVVVVV has requirements for process vents, storage vessels, transfer operations

40 CFR Part 63, Subparts H and I, National Emission Standards for Hazardous Air Pollutants: Equipment Leaks and Certain Processes Subject to the Negotiated Regulation

for Equipment Leaks: The Sym-Tet Plant is a symmetrical tetrachloropyridine production plant as specified in Section 63.190(b)(4)(vi) and is therefore subject to the fugitive emission section of these rules. Dow reports fugitives as required in Section 63.182(b) with applicability to Subpart H and I. All of the Subpart H/I requirements have been included in the Source Specific Applicable Requirements section of the Title V permit in a single table for components subject to these regulations.

Trifluoro Plant, Plant 421: This plant is produces agricultural intermediates, which are shipped offsite for further processing. The plant reacts a chlorinated pyridine with HF to produce a fluorinated pyridine, with HCl as a byproduct. Emissions from the process are HCl, HF, and hydrocarbons.

S-269, T-5 Sulfuryl Fluoride Plant Hydrogen Fluoride Storage (exempt)
This tank stores HF unit needed to supply the reaction.

S-449, T-30 HCl
S-474, Reactor R-210 (Plant 421) – Verdict
S-476, Plant 421 Trifluoro
The plant is composed of the reactor section, S-474, where the product is produced, and the separation section, S-476. The HCl byproduct from S-474 is abated by A-98, B-202 Reactor Vent Scrubber, followed by A-99, B-203 Scrubber, followed by S-694 Reaction/HCl Absorption System. The product from S-474 and S-476 is stored in T-226 and T-227, exempt storage tanks.

The previous Title V permit identified 40 CFR Part 63 Subpart NNNNN (NESHAP for Hydrochloric Acid Production) as an applicable requirement. S-476, Plant 421, produces aqueous HCl acid at less than 30% concentration, therefore, Subpart NNNNN does not apply.

Plant 663, Lontrel Plant: Lontrel is a solid herbicide. The Lontrel Process reacts a chlorinated pyridine with an aqueous solution of sulfuric acid to produce and insoluble organic acid. HCl is a byproduct of this reaction. The process results in emissions of particulate matter, including acid mist.

S-461, Plant 663 R-401 Reactor
S-462, Plant 663 R-402 Reactor
S-463, Plant 663 F-403 Separator
S-465, Plant 663 D-413 Dryer
S-466, Plant 663 T-408A Intermediate Product Storage
S-467, Plant 663 T-408B Intermediate Product Storage
S-190, T-643 (exempt)
S-195, T-648 (exempt)
S-194, Fixed Roof Tank (exempt)
The chlorinated pyridine is fed to the reactor, S-461, by pipeline from the exempt tank, S-194. The sulfuric acid is delivered to an exempt storage tank from a tank truck and then from the exempt storage tank to the Lontrel process by pipeline. S-461 is vented to an acid absorber, A-96, to remove HCl from the gas stream. The chiller/condenser returns any unreacted sulfuric acid to the reactor. The pyridine is a high boiling point material and is not vaporized at S-461. The product organic acid is precipitated out of solution by the addition of water in S-462 to form

a slurry. The product can be packaged directly after the Separator, S-463 or after the Dryer, S-465. The acid can also be formulated with water and monoethanol amine to produce a salt in S-466 and S-467, which is then stored in exempt tanks S-190 and S-195. These sources are subject to Regulation 6, Rule 1 requirements.

40 CFR Part 63, Subpart MMM, National Emission Standards for Hazardous Air Pollutant Emissions: Pesticide Active Ingredient Production (PAI MACT): The Lontrel Plant is subject by the Pesticide Active Ingredient MACT, 40 CFR Part 63, Subpart MMM, due to emissions of HCl. S-461 and S-462 are subject to the Pesticide MACT.

The effective date of the PAI MACT was 6-23-1999, with a compliance deadline of December 23, 2003. Subpart MMM has been included in the applicable requirements for S-461 and S-462.

S-461 and S-462 are subject to Subpart MMM due to emissions of hydrochloric acid. A-96, B-405 packed bed scrubber is used to control HCl emissions to comply with Subpart MMM. Compliance with emissions standards was demonstrated by performance test.

Requirements of Subpart H under Subpart MMM is not applicable to S-461 and S-462 because there are no OHAPS listed in section 112(bP of the Clean Air Act in use in the Lontrel Plant.

Plant 640, MEI Plant*:* This plant produces a methyl ester intermediate, which is an intermediate for the herbicide Starane. The reactants include a fully halogenated heterocycle, potassium fluoride (KF), aqueous ammonia, potassium hydroxide (KOH), and methyl chloroacetate (MCA). N-methyl pyrrolidone (NMP) is used as a solvent. The reaction produces the herbicide intermediate and byproducts potassium chloride (KCl) salt, a pyridine tar waste, and a wastewater stream contaminated with organic material (mostly methanol), all of these reaction byproducts are shipped offsite. Emissions include methyl chloride, MCA, NMP, methanol, and ammonia.

S-593, Plant 640 Section 1, abated by A-146, Packed Bed NMP Scrubber and A-147, Packed Bed Water Scrubber in series
S-594, Plant 640 Section 2, abated by A-147, Packed Bed Water Scrubber
S-595, Plant 640 Section 3, abated by A-149, Packed Bed Water Scrubber
S-596, Plant 640 Section 4, abated by A-148, Packed Bed Water Scrubber and A-147, Packed Bed Water Scrubber in series
The plant is composed of reactors, storage tanks, columns, and 4 scrubbers. At different stages of the reaction, the feed heterocycle is processed through different chemical intermediates until the final product is produced and isolated.

The aqueous KF is unloaded from a railcar and delivered by pipeline to the KF storage tank for use in this plant. The feed heterocycle is delivered to this plant by pipeline. Aqueous ammonia is unloaded from a truck into a storage tank within the process. KOH in water is unloaded from a railcar, stored in an exempt tank, and delivered by pipeline to the process. MCA is delivered by tank truck directly into a process storage tank.

The sources in this manufacturing process are subject to Regulation 8, Rule 2, due to emissions of various organic compounds. S-595, Section 3 of the process, also emits ammonia.

S-602, Tank Truck Loading Facility (exempt)
S-604, Truck Loading Facility
S-606, Storage Tank T-602 (exempt)
S-607, Storage Tank T-1904
The low vapor pressure pyridine tar waste from this process is stored at S-606 and loaded at S-602 to be sent offsite for disposal. Process wastewater is stored at S-607 and loaded at S-604 to be sent offsite for disposal.

The Dow Pittsburg facility was an area source prior to the compliance date of Subpart FFFF, therefore, all facilities (plants) at the Dow Pittsburg site are not subject to this Subpart.

AFTF Process: Dow produces a fluorinated pyridine, a fungicide intermediate, for export sales. This process is similar to the Trifluoro process, with reactants including a chlorinated pyridine and anhydrous hydrogen fluoride. The fluorinated pyridine and HCl are co-products of the reaction, with potassium salts produced as a byproduct. Emissions include hydrocarbons, HCl, and HF.

S-693, Distillation System
S-694, Reaction/HCl Absorption System
A-194, X-600 Venturi Scrubber
A-195, B-615 Scrubber
The chlorinated pyridine for this process is produced onsite and delivered to S-694 by pipeline. The hydrogen fluoride is stored at the Trifluoro plant until it is delivered to this process, also by pipeline. After the conversion takes place at S-694, the HCl byproduct is absorbed into water. The unrefined product is then transferred to S-693 for purification, and the potassium salt byproduct is forwarded for use at another process by pipeline or tank truck. The vent from S-694 is abated by A-195, a packed bed caustic scrubbing column. S-693 is abated by A-194, a caustic venturi scrubber. The pressure relief valves in acid gas service are also abated by A-194. The acid mist emissions are subject to Regulation 6, Rule 1. The organic emissions are subject to Regulation 8, Rules 2 and 10.

S-695, T-580 FTF Storage
S-696, T-585
S-697, ISO Container Loading Operation
S-699, Purge Tank/Drum Loading Operation
The purified product is stored for shipment in S-695 and S-696 prior to be loaded into containers at S-697 for shipping offsite. The storage tanks are subject to Regulation 8, Rule 5. A small organic purge stream from the process, containing impurities, is loaded into containers at S-699 and shipped offsite for disposal. S-697 and S-699 are exempt from Regulation 8, Rule 6 due to the low vapor pressure of the liquids being transferred.

Utility Closed Loop System: These tanks function as head tanks or wide spots in the lines of a closed-loop perchloroethylene utility system. The perchloroethylene is heated or cooled by circulating through a heat exchanger, then delivered to process heat exchangers for condensing reactor and distillation column vapors and to moderate the temperature of process liquid streams at the various production plants. The perchloroethylene is then returned to the recirculating

pumps. These tanks act as reservoirs to provide vapor space for expansion and to provide liquid head to prevent the recirculating pumps from cavitating.
S-55, T-30 N-Serve®
S-346, T-241
S-372, T-20 in Block 560
S-458, T-80 Block 660
S-625, T-610 Perc Expansion Tank

Resin Bed Dryers: These dryers are used to remove water from chlorinated solvents that are terminalized at the facility or received for use in a production process at the facility. None of these driers are currently in use. They are either subject to Regulation 8, Rule 2, or exempt from Regulation 8 requirements through Section 8-1-110.3.
S-321, D-608A Dryer
S-323, D-605A Dryer
S-324, D-609 Dryer
S-535, D-605B Portable Dryer

Storage Tanks: The storage tanks are subject to District Regulation 6, Rule 1 or Regulation 8, depending on whether they store acids or organic compounds. All storage tanks not included in the discussion of the production plants above are for storage of terminalized products or exempt materials

For the tanks that store acids, the acid emissions may be in the form of acid vapor or acid mist. Acid mist emissions, being a form of particulate emissions, are subject to Regulation 6, Rule 1. The District does not have source test data for each source to demonstrate how much, if any, of the acid emissions are particulate, as opposed to acid vapor. Therefore, Regulation 6, Rule 1 requirements have been included as applicable requirements for all acid storage tanks.

Organic liquid tanks are subject to the storage and loading requirements in Regulation 8, Rule 5, except the tanks used for processing are subject to Regulation 8, Rule 2 or a more specific Regulation 8 rule. Some of the tanks subject to Regulation 8, Rule 5 are exempted from the standards in Regulation 8, Rule 5 due to storing materials with low vapor pressure. As explained previously, the tanks that are exempt from Rule 8-5 are not subject to Rule 8-2, as the exemption in Rule 8-5 does not direct applicability back to Rule 8-2. A few tanks are also subject to MACT standards in addition to District regulations, as they are considered an integral part of the production process as defined by the MACT. Where this is the case, a full discussion of the MACT applicability is included with the production process description.

In addition, Regulation 8, Rule 6 contains standards that apply to the loading of certain tanks. Loading of portable tanks/delivery vehicles is subject to Section 8-6-302. Section 8-6-304 has requirements that apply to the "transfer" of materials with vapor pressure ≥ 1.5 psia into tanks between 7.6 and 150 cubic meters in size. The term "transfer" is not defined in the regulation, but in every other use of the term in the regulation is in conjunction with loading of delivery vehicles or transportable containers. Therefore, Section 8-6-304 is shown in the permit to apply to the six tanks at the facility which may be loaded from delivery vehicles/transportable containers and which meet the size and material vapor pressure restrictions.

Chlorinolysis Process: Chlorinolysis Train 1 (S-504) processes an aqueous stream containing organics and treats it with heat and sodium hypochlorite (bleach) to decompose the small amounts of organics in the stream. Chlorinolysis Train 2 (S-505) processes an aqueous stream containing sodium hydroxide, sodium chloride, bleach and low levels of organics. The aqueous stream is treated with hydrogen peroxide to remove the organics and bleach. The vent streams from these sources are sent to the S-400 Thermal Oxidizer and the treated water is then recycled. These miscellaneous operations are subject to Regulation 8, Rule 2 due to organic emissions.

Components: The components at the facility with fugitive emissions such as valves, flanges, pumps, pressure relief devices, connectors, are subject to District Regulation 8, Rules 18 and 28. District Regulation 8, Rule 25 was deleted on January 7, 1998, however a version still exists in the District's SIP. This SIP rule also applies. These requirements have been listed in a Component table in Section IV of the permit.

In addition to District regulations, the components at certain production processes are also subject to the National Emission Standards for Hazardous Air Pollutants for Source Categories – Other Processes Subject to the Negotiated Regulation for Equipment Leaks. This was discussed under the descriptions of the specific subject production processes. The requirements from this regulation have been listed in a separate table in Section IV of the permit. Since these components are not individually tracked with District identifiers, such as with sources and abatement devices, the subject components are identified by the production processes in the table for these MACT standards.

Combustion Sources

Thermal Oxidizers, S-336, S-389, S-400/A-121: The primary purpose of these devices is to oxidize surplus chlorinated organic byproducts to generate hydrochloric acid. Therefore, these devices were permitted as sources rather than abatement devices. S-400 was originally permitted to burn chlorinated liquids and vapors, but Dow has since decided to burn the chlorinated liquids at S-336 and S-389 exclusively. The devices are subject to Regulation 6, Rule 1 for particulate emissions and acid mist, Regulation 8, Rule 2 for organic compounds, and Regulation 9, Rule 1 for sulfur dioxide. Note that Regulation 6-1-311 does not apply to S-400, as it is a heat exchanger.

S-336 and S-389 are not subject to Regulation 9, Rule 7, which applies to heaters that heat process streams indirectly. These combustion devices heat the waste and process streams directly. S-400 is however subject to Regulation 9, Rule 7, but only to the low fuel usage requirements in 9-7-304, which will be met through the annual tuning provisions of 304.2.

The combustion devices S-336 and S-389 also act to abate vent emissions from other sources at this facility. In some cases, the abatement is voluntary and in others it is required by the regulations that apply to the abated sources. Where the abatement is required, the requirement (usually a permit condition) has been listed as an applicable requirement in the table for the abated source. S-336 burns natural gas and abates chlorinated compounds from tank vents. S-389 burns natural gas and abates chlorinated compounds as well as tar byproducts from the SymTet plant, which contain nitrogen. Due to the nitrogen-containing materials, the permitting for S-389 included NOx abatement – non-selective catalytic reduction (NSCR – hydrogen and catalyst, no ammonia) and more stringent NOx limits and monitoring. To protect this catalyst

bed, S-389 also has more stringent organic (carbon absorption) and particulate (MistAir Scrubber) removal systems than S-336.

The large Thermal Oxidizers, S-336 and S-389, are also subject to the Boiler and Industrial Furnace Rule under the Resource Conservation and Recovery Act (RCRA), 40 CFR 266, Subpart H, and are operating under an RCRA permit issued by the California Environmental Protection Agency, Department of Toxic Substances Control. However, the RCRA permit is not required to be included as part of the Title V permit, as the Title V permit contains only air quality requirements defined under Regulation 2-6-202.

40 CFR Part 63 Subpart EEE-National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors

These oxidizers are classified as hazardous waste hydrochloric acid production furnaces (halogen acid furnace defined under 40 CFR 60 Section 261.10. The definition of "industrial furnace" under 261.10 means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to accomplish recovery of materials or energy:

(12) Halogen acid furnaces (HAFs) for the production of acid from halogenated hazardous waste generated by chemical production facilities where the furnace is located on the site of a chemical production facility, the acid product has a halogen acid content of at least 3%, the acid product is used in a manufacturing process, and, except for hazardous waste burned as fuel, hazardous waste fed to the furnace has a minimum halogen content of 20% as-generated.

These oxidizers are halogen acid furnaces, which are included in the industrial furnace category, and therefore defined as hazardous waste hydrochloric acid production furnace under Subpart EEE. Subpart EEE requires establishment of a minimum operating temperature and other operating conditions through a Performance Test and installation of a temperature monitor with continuous recorder for the primary control devices, S-336 and S-389. These oxidizers were already equipped with continuous temperature monitors as required by the existing District permit conditions. The oxidizers are also equipped with continuous monitoring systems to monitor other key process parameters specified by Subpart EEE.

Subpart EEE requires the owner/operator of each of these oxidizers to document all of the key process parameters during the performance test and to monitor these parameters during normal operation to ensure that the unit meets the destruction and removal efficiency requirements of 99.99% (63.1218(c)(1)). The oxidizers are also required to meet a CO emission limit of 100 ppm @7% O2 (63.1218(a)(5). Each oxidizer is equipped with a CO continuous emission monitor to ensure that this emission limit is met. The oxidizers are also subject to hydrochloric acid and chlorine limit of 25 ppm @7% O2 as Cl(-) equivalent (63.1218(a)(6).

These boilers are also subject to the Boiler and Industrial Furnace Rule, 40 CFR 266, Subpart H, for which trial burns were conducted in October and November of 1999 as part of the Resource Conservation and Recovery Act (RCRA) permitting process.

The closed vent system to the oxidizers is equipped with a bypass line, and Dow has elected under the subpart EEE monitoring options to operate a flow indicator to track any diversions to this bypass line. The closed vent piping to S-336 is monitored once per year, as is the piping to S-389.

The two remaining large combustion devices, S-444 and S-460, are natural gas heaters used to heat Dowtherm, a heat transfer fluid. They are subject to the visible and outlet grain loading standards in Regulation 6, Rule 1, exempt from Regulation 8, Rule 2 (since they burn natural gas exclusively), and subject to Regulation 9, Rules 1 and 7. These two sources are also heat exchangers and therefore not subject Regulation 6-1-311.

Dow also has permits for several small emergency standby diesel generators and one emergency propane/natural gas generator. These generators were permitted recently due to a change in District regulations governing emergency generators. The combustion emissions from these sources are subject to the standards in Regulation 6, Rule 1, Regulation 9, Rules 1 and 8. They are exempt from Regulation 8, under Section 8-1-110.2. The Regulation 1 exclusion in the State Implementation Plan (SIP) for generators used exclusively for backup power has not yet been removed. Inclusion of District regulations in the SIP makes the requirements federally enforceable, so all current District regulations that apply to these generators have been listed as non-federally enforceable for these sources, even if those regulations are themselves in the SIP and are otherwise federally enforceable for other source categories.

Groundwater Treatment: Dow operates a groundwater treatment plant. The associated sources, S-531, T410C Storage Tank Tote and S-532, T410D Storage Tote Tank, are subject to District Regulation 8, Rule 47, Organic Compounds – Air Stripping and Soil Vapor Extraction Operations. The operation is also regulated under the Department of Toxic Substances Control Permit by Rule Tiered Permitting Program. These requirements are not included in the Title V permit, which is required to contain only air quality requirements defined under Regulation 2-6-202.

Facility Requirements: In addition to the Generally Applicable Requirements listed in Section III of the permit, a facility table has been included in Section IV of the permit for those requirements that apply to in a general manner to the relevant operations at the facility, but which may also require monitoring.

Clean Air Act Section 112(j):

The facility is no longer subject to the case-by-case MACT determination requirement in 112(j) of the Clean Air Act because it is not a major facility for hazardous air pollutants (HAPs). The facility is subject to a federally enforceable permit condition that limits HAP emissions to less than 9 tons/year for any single HAP and 23 tons/year for aggregate HAP. Dow accepted the HAP minor permit condition so that facility wide emissions going forward from May 7, 2008 would not exceed major source thresholds.

Compliance Assurance Monitoring, 40 CFR Part 64: This facility does not have any sources subject to the compliance assurance monitoring regulation. The actual emissions from the facility have been below major source thresholds for a number of years. The facility plans to

accept emission limits for the criteria pollutants to limit emissions below major source thresholds. The facility will then have no major sources onsite and CAM will not apply to any sources.

Chemical Accident Prevention Provisions, 40 CFR Part 68: This facility is subject to the requirements of this rule, including submittal of a Risk Management Plan (RMP). Although the RMP is not required to be included in the Title V permit, the requirement to have a RMP must be contained in the permit and compliance with the RMP must be addressed within the compliance certifications required by the Title V program. The citation of this requirement can be found in Section I of the permit.

Air Toxics "Hot Spots" Information and Assessment Act of 1987, California Health and Safety Code Section 44300 et seq, California Assembly Bill 2588 (AB2588): This facility is subject to the AB2588 requirements, listed in the Generally Applicable Requirements, Section III of the permit. The original risk assessment from 1991 under AB2588 designated Dow a Level 1 facility (total offsite cancer risk in excess of 10 in a million), which required the facility to perform quarterly public notifications. Since the institution of these requirements, Dow has reduced toxic emissions such that the facility risk has been cut by more than 50%. In some cases, these reductions have been achieved through abatement of emissions not required by District regulations. The basis for the permit conditions documenting these reductions is indicated as a "voluntary limit." The revised risk assessment documenting the reduction in emissions and risk was submitted November 21, 2001, reviewed by the District and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, and approved October 16, 2002. As a result of being redesignated a Level 0 facility, with overall risk of less than 10 in a million, Dow is no longer required to issue public notifications under this program.

Changes to the permit:

Section IV of the permit contains citations to all of the applicable requirements for particular sources. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

The draft permit has numerous tables removed from the permit due to shutdown sources. The draft permit also has new tables inserted into the permit. The tables are identified by a letter identifier from the existing permit. The new inserted tables are identified as Table IV-TBD (To Be Determined). The new tables are inserted based on the source numbers. All of the tables will be renumbered to account for the new tables and the deleted tables when the draft permit is finalized.

Table IV-A

Table IV-A has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to the facility as shown below.

Action	**Title/Description**
Added SIP Version Regulation 8, Rule 10	Organic Compounds – Process Vessel Depressurization
Removed 40 CFR Part 63, Subpart B	National Emission Standards for Hazardous Air Pollutants for Source Categories: General Provisions; and Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections, Section 112(g) and 112(j); Final Rule
Removed 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)
Removed 40 CFR Part 63, Subpart FFFF	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Removed 40 CFR Part 63, Subpart GGGGG	National Emission Standards for Hazardous Air Pollutants: Site Remediation

40 CFR Part 63, Subpart B no longer applies to the facility since the facility is no longer a major source of HAP. The three MACTs listed (Subpart EEEE, Subpart FFFF, and Subpart GGGGG) in Table IV-A of the existing Title V permit have been promulgated and have been removed from Table IV-A. Subpart EEEE applies to the facility and these requirements are listed under the applicable requirements table for each source that is subject to this regulation. The facility was a minor source of HAP prior to the compliance date for Subpart FFFF and this regulation does not apply. Subpart GGGGG does not apply to the site remediation activities at the site. Subpart GGGGG does not apply to the Dow Pittsburg site as there were no activities that invoked the regulation and the facility is not a major source of HAP.

Table IV-B

Table IV-B has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-4 HCl Rail Car Loading operation as shown below.

Action	**Title/Description**
Added BAAQMD Regulation 6, Rule 1	Particulate Matter and Visible Emissions
Added SIP Version Regulation 6	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63, Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

Subpart NNNNN applies because this source 63.8985(a) produces an HCl with a weight percent of over 30%.

Table IV-C

Table IV-C was revised to add new applicable requirements to S-5 725 Terminalized Products as shown below.

Action	Title/Description
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)
Added changes to Part 3 of Condition 11276	Abatement requirement for 1,3-dichloropropene loading

The fugitive components at S-5, 720 Terminalized Products are subject to 40 CFR Part 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. Please note that equipment leaks subject to Subpart EEEE refer to Subpart H only applies to valves and pumps (not connectors). Connectors at transfer racks are subject to Subpart H requirements. These applicable requirements are contained in Table IV-DA.

Table IV-D

There were no changes made to Table IV-D for S-6, 725 Terminalized Products.

Table IV-E

There were no changes made to Table IV-E for S-7, 725 Block Truck Loading.

Table IV-F

This table has been deleted from the draft permit. S-25 Material Flow Latex Tank has been permanently shutdown.

Table IV-G

Table IV-G has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Terminalized Product Storage as shown below.

Action	Title/Description
Added SIP Regulation 8, Rule 5 requirements	Organic Compounds – Storage of Organic Liquids
Added detailed citations for 40 CFR Part 60, Subpart Kb	New Source Performance Standard for Standards of Performance for Volatile Organic Liquid Storage Vessels

Subpart Kb applies to the terminalized storage tanks due to the size of the tanks and vapor pressure of the material.

Table IV-H

Table IV-H has been revised to add new applicable requirements to Tanks storing liquid with vapor pressure ≤ 0.5 psia as shown below.

Action	**Title/Description**
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) This Only Applies To S-346 (T-241) and S-372 (T-20)

Subpart EEEE only applies to two storage tanks S-346 (T-241) and S-372 (T-20).

Table IV-I

Table IV-I has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Terminalized Products Tanks abated by thermal oxidizer as shown below.

Action	**Title/Description**
Added SIP Regulation 8, Rule 5 requirements	Organic Compounds – Storage of Organic Liquids

Table IV-J

Table IV-J has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-40 Water Treatement HCl Storage as shown below.

Action	**Title/Description**
Added District Regulation 6, Rule requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

Table IV-K

Table IV-K has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-44 N-Serve Plant as shown below.

Action	**Title/Description**

Action	Title/Description
Added District Regulation 6, Rule requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 8, Rule 10 requirements	Organic Compounds – Process Vessel Depressurization
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) This Only Applies To T-70 and T-74 at the N-Serve Plant
Removed District Condition 21060	Recordkeeping requirements for process vessel depressurization

The fugitive components at storage tank T-70 and T-74 are subject to 40 CFR Part 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. These applicable requirements are contained in Table IV-DA.

District condition 21060 required recordkeeping for process vessel depressurization until Regulation 8, Rule 10 was amended to include chemical plants. This regulation was amended and condition 21060 is no longer necessary and this condition has been archived.

Table IV-L

There were no changes made to Table IV-E for S-48, T-19A N-Serve and S-49, T-19B N-Serve.

Table IV-M

Table IV-M has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-55 and S-408 Pressure Tanks as shown below.

Action	Title/Description
Added SIP Regulation 8, Rule 5 requirements	Organic Compounds – Storage of Organic Liquids

Table IV-N

Table IV-N has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-135 and S-136 HCl Storage Tanks as shown below.

Action	Title/Description
Added District Regulation 6, Rule requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

Table IV-O

Table IV-O has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to HCl Storage Tanks as shown below.

Action	**Title/Description**
Added District Regulation 6, Rule requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63, Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

Subpart NNNNN was previously listed as a future effective requirement. The compliance date has passed and the facility is meeting the requirements of this regulation.

Table IV-TBD (Tables will be renumbered as necessary at issuance)

Table IV-TBD has been added to show the applicable District Rules and Regulations for S-161 Maintenance Paint Booth M-1 as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 3 requirements	Organic Compounds, Architectural Coatings
Added SIP Regulation 8, Rule 3 requirements	Organic Compounds, Architectural Coatings
Added Regulation 8, Rule 19 requirements	Organic Compounds, Surface Preparation and Coating of Miscellaneous Parts and Products

Table IV-TBD (Tables will be renumbered as necessary at issuance)

Table IV-TBD has been added to show the applicable District Rules and Regulations for S-170 Maintenance Paint Booth M-4 as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 3 requirements	Organic Compounds, Architectural Coatings
Added SIP Regulation 8, Rule 3 requirements	Organic Compounds, Architectural Coatings
Added Regulation 8, Rule 19 requirements	Organic Compounds, Surface Preparation and Coating of Miscellaneous Parts and Products

Table IV-P

Table IV-P has been revised to add/remove applicable requirements to S-174 Gasoline Dispensing Facility as shown below.

Action	**Title/Description**

Action	Title/Description
Removed Regulation 8, Rule 7 citations that no longer apply to S-174	Organic Compounds, Gasoline Dispensing Facilities
Removed Condition 14098 requirements	Old condition text has been archived
Added Condition 24289 requirements	Throughput Limit

Dow has limited the throughput for S-174 to less than 20,000 gallons per year. The phase II vapor recovery requirements are no longer applicable to S-174 in accordance with Regulation 8, Rule 7 requirements. The changes to the District permit conditions were permitted under Application 19565.

Table IV-Q

Table IV-Q has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Chloralkali Cooling Towers as shown below.

Action	Title/Description
Added District Regulation 6, Rule requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

Table IV-R

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

Table IV-S

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

Table IV-U

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

Table IV-V

Table IV-V has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-286 Railcar Purging Facility as shown below.

Action	Title/Description
Added District Regulation 6, Rule	Particulate Matter and Visible Emissions

Action	Title/Description
requirements	
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

Table IV-W

Table IV-W has been revised to add new applicable requirements to S-302 and S-303 Dowicil Trains as shown below.

Action	Title/Description
Added 40 CFR Part 63, Subpart VVVVVV requirements	National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

The facility is required to be in compliance with Subpart VVVVVV requirements by October 29, 2012.

Table IV-X

Table IV-X for S-308 Fumigants Cylinder Paint Hood has been revised to show that several citations in Regulation 8, Rule 19 are federally enforceable as shown below. The future abatement system has been installed and is now operational.

Action	Title/Description
Updated District Regulation 8, Rule 19 citations.	Organic Compounds - Surface Preparation and Coating of Miscellaneous Parts and Products

Table IV-Y

Table IV-Y for Fumigants Gas Cylinder Handling Area has been revised to change the effectiveness dates of applicable District Rules and Regulations. The future abatement system has been installed and is now operational. The basis of several parts of condition 20302 was changed from Toxics Risk Management Policy to Regulation 2, Rule 5.

Table IV-Z

Table IV-Z for S-314 Fumigants Paint Booth has been revised to show that several citations in Regulation 8, Rule 19 are federally enforceable as shown below.

Action	Title/Description
Updated District Regulation 8, Rule 19 citations.	Organic Compounds - Surface Preparation and Coating of Miscellaneous Parts and Products

Table IV-AA

No changes were made to Table IV-AA for S-321 Dryer..

Table IV-AB

No changes were made to Table IV-AB for S-322 Portable Dryers.

Table IV-AC

No changes were made to Table IV-AC for S-323 Dryer, S-324 Dryer, S-535 Dryer.

Table IV-AD

Table IV-AD for S-326 Storage Tank has been revised to include the SIP version of Regulation 8, Rule 5 and the effectiveness dates were also revised.

Table IV-AE

Table IV-AE for S-336 Manufacturing Services Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added SIP version of Regulation 1 requirements.	General Provisions and Definitions
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added 40 CFR Part 63 Subpart EEE citations.	National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	
Condition 16610 has been deleted.	Latex Plant has been shutdown

S-336 Manufacturing Services Halogen Acid Furnace is subject to Subpart EEE because it is a halogen acid furnace under this subpart.

Table IV-AF

Table-AF for S-389 Sym-Tet Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**

Action	Title/Description
Added SIP version of Regulation 1 requirements.	General Provisions and Definitions
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added 40 CFR Part 63 Subpart EEE citations.	National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	
Condition 16610 has been deleted.	Latex Plant has been shutdown

S-389 Manufacturing Services Halogen Acid Furnace is subject to Subpart EEE because it is a halogen acid furnace under this subpart.

Table IV-AG

Table-AG for S-400 Experimental Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added SIP version of Regulation 1 requirements.	General Provisions and Definitions
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Updated Regulation 9, Rule 7 citations.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added SIP version of Regulation 9, Rule 7.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

Table IV-AH

Table IV-AH for S-402 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions

Action	Title/Description
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	

Table IV-AI

No changes were made to Table IV-AI for S-428 Sym-Tet Processing and S-448 Sym-Tet.

Table IV-AJ

Table IV-AJ for S-429 Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Updated Regulation 8, Rule 5 requirements.	Organic Compounds - STORAGE OF ORGANIC LIQUIDS
Added SIP version of Regulation 8, Rule 5.	Organic Compounds - STORAGE OF ORGANIC LIQUIDS

No changes were made to Table IV-AI for S-428 Sym-Tet Processing and S-448 Sym-Tet.

Table IV-AK

Table IV-AK for S-431 Carbon Tetrachloride Pressure Vessel and S-432 Carbon Tetrachloride Pressure Vessel has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Updated Regulation 8, Rule 5 requirements.	Organic Compounds - STORAGE OF ORGANIC LIQUIDS
Added SIP version of Regulation 8, Rule 5.	Organic Compounds - STORAGE OF ORGANIC LIQUIDS
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	

Table IV-AL

Table-AL for S-434 Manufacturing Sevices has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added SIP version of Regulation 1 requirements.	General Provisions and Definitions
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Updated Regulation 8, Rule 10 citations.	Organic Compounds – Process Vessel Depressurization
Added SIP Version of Regulation 8, Rule 10.	Organic Compounds – Process Vessel Depressurization
Added detailed citations for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Updated basis for each part of condition 17985.	
Deleted condition 21060.	This condition required record keeping of process vessel depressurization until Regulation 9, Rule 10 has been revised to include vessels at chemical plants. This regulation has been revised and the condition is no longer necessary.
Deleted footnote that referred to startup of S-712.	This source is now in operation and the footnote is no longer necessary.

Subpart NNNNN applies since the strength to the HCl produced is over 30%.

Table IV-AM

Table-AM for S-444 Dowtherm Heater has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Updated Regulation 9, Rule 7 citations.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added SIP version of Regulation 9, Rule 7.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Removed 40 CFR Part 63 Subpart A citations.	These are no longer applicable since no MACT requirements apply to this source.
Removed 40 CFR Part 63 Subpart DDDDD citations. Permit incorrectly cited Subpart	Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for

Action	Title/Description
DDDD which applies to plywood and composite wood manufacturing the correct citation is Subpart DDDDD which applies to Industrial, Commercial, and Institutional Boilers and Process Heaters.	Industrial, Commercial, and Institutional Boilers and Process Heaters. This MACT does not apply to the facility since Dow is no longer a major source of HAP. Subpart DDDDD effective compliance dates have been delayed until further notice (See 76 Federal Register Notice 28664 dated May 18, 2011).
Added changes to condition 11054 permitted under application 23595.	This source has an upgraded burner to meet Regulation 9, Rule 7 requirements.

Table IV-AN

Table-AN for S-446 Sym-Tet Plant has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 8, Rule 10 requirements.	Organic Compounds - Process Vessel Depressurization
Added SIP version of Regulation 8, Rule 10 requirements.	Organic Compounds - Process Vessel Depressurization
Added 40 CFR Part 63 Subpart VVVVVV requirements.	National Emission Standards For Hazardous Air Pollutants For Chemical Manufacturing Area Sources
Removed Condition 21060.	This condition required record keeping of process vessel depressurization until Regulation 9, Rule 10 has been revised to include vessels at chemical plants. This regulation has been revised and the condition is no longer necessary.

Table IV-AO

This table has been deleted since S-449 HCl Storage Tank has been permanently shutdown.

Table IV-TBD

Table IV-TBD for exempt sources S-450 HCl/Sodium Hydroxide Storage Tank and S-451 HCl/Sodium Hydroxide Storage Tank has been added to the permit. The applicable requirements added to the table are shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added BAAQMD Condition 6074 requirements.	

Table IV-AP

This table has been deleted since the Vikane Plant has been permanently shutdown.

Table IV-AQ

Table-AQ for S-458 Pressure Tank has been revised to change the effectiveness dates of applicable District Rule and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-AR

Table-AR for S-460 Dowtherm Heater has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 9, Rule 7 requirements.	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide
Added SIP version of Regulation 9, Rule 7.	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide
Removed 40 CFR Part 63 Subpart A citations.	These are no longer applicable since no MACT requirements apply to this source.
Removed 40 CFR Part 63 Subpart DDDDD	Subpart DDDDD—National Emission

Action	Title/Description
citations. Permit incorrectly cited Subpart DDDD which applies to plywood and composite wood manufacturing the correct citation is Subpart DDDDD which applies to Industrial, Commercial, and Institutional Boilers and Process Heaters.	Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters. This MACT does not apply to the facility since Dow is no longer a major source of HAP. Subpart DDDDD effective compliance dates have been delayed until further notice (See 76 Federal Register Notice 28664 dated May 18, 2011).

Table IV-AS

Table-AS for S-461 Plant 663 Reactor R-401 has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63 Subpart MMM.	National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production

Table IV-AT

Table-AT for S-461 Plant 663 Reactor R-402 has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added detailed citations 40 CFR Part 63 Subpart MMM.	National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production.

Table IV-AU

Table IV-AU for S-465 Product Dryer (formerly S-464 Product Dryer) has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. This table used to apply to S-464 which was replaced by an identical unit S-465, which was permitted under application 15133.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Removed BAAQMD condition 1359 which applies to the former S-464 Product Dryer.	
Added BAAQMD condition 23250.	

Table IV-AV

Table IV-AV for S-474 Plant 421 Verdict and S-476 Plant 421 Trifluoro has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Deleted 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production. S-476, Plant 421, produces aqueous HCl acid at less than 30% concentration, therefore, Subpart NNNNN does not apply.

Table IV-AW

No changes were made to Table IV-AV for S-482 Carbon Tetrachloride Rail Car Loading.

Table IV-TBD

Table IV-TBD for S-483 Carbon Tetrachloride Rail Car Loading has been added to the draft permit and contains the applicable requirements as shown below. S-483 was permitted under application 21795.

Action	Title/Description
Added Regulation 8, Rule 6 requirements.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 11276.	
Added BAAQMD condition 24779	

Table IV-AX

This table has been removed from the draft permit since S-489 Latex Still has been permanently shutdown.

Table IV-AY

This table has been removed from the draft permit since S-490 Partial Condenser has been permanently shutdown.

Table IV-AZ

Table IV-AZ for S-492 Environmental Services Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-BA

Table IV-BA for S-496 Storage Tank Specialty Chemicals has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-BB

Table IV-BB for S-504 Chlorinolysis Train 1 has been revised to change the effectiveness dates of applicable District Rules and Regulations.

Table IV-BC

Table IV-BC for S-505 Chlorinolysis Train 2 has been revised to change the effectiveness dates of applicable District Rules and Regulations.

Table IV-BD

Table IV-BD for S-506 Manufacturing Services Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Revised detailed citations for 40 CFR Part 60 Subpart Kb.	Standards of Performance for Volatile Organic Liquid Storage Vessels

Table IV-BE

This table has been removed from the draft permit since S-507 Latex Plant Reactor has been permanently shutdown.

Table IV-BF

Table IV-BF for S-519 Chlorinated Pyridine Storage Tank and S-520 Chlorinated Pyridine Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-BG

Table IV-BG for S-521 Water Treatment System (Steam Stripper) has been revised to change the effectiveness dates of applicable District Rules and Regulations.

Table IV-BH

No changes were made to Table IV-BH for S-530 HCl Storage Tank.

Table IV-BI

Table IV-BI for S-531 and S-532 Organic Liquid Storage Tanks has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-BJ

Table IV-BJ for S-576 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

Table IV-BK

Table IV-BK for S-580 through S-583 Specialty Chemical Storage Tanks has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-TBD

Table IV-TBD for S-584 Drum Filling Station (exempt) has been added to the draft permit and contains applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 2 requirements.	Organic Compounds – Miscellaneous Operations
Added Regulation 8, Rule 6 exemptions.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 3500.	

Table IV-BL

Table IV-BL for S-586 Recycle Styrene Storage Tank has been deleted. This equipment has been permanently shutdown.

Table IV-BM

Table IV-BM for S-587 Tank Truck Loading at Latex for Recycle Styrene has been deleted. This equipment has been permanently shutdown.

Table IV-BN

This table has been removed from the draft permit since S-588 Drum Filling Station has been permanently shutdown.

Table IV-BO

Table IV-BO for S-593 through S-596 of Plant 640 has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. The MEI Plant was expanded in 2008 under application 14456.

Action	Title/Description
Revised citations for BAAQMD condition 4780. Changed basis of some condition parts from toxics risk management policy to Regulation 2, Rule 5.	This condition was revised under application 14456 (MEI Plant Expansion)

Table IV-BP

The changes to Table IV-BP are shown below.

Action	Title/Description
Revised the basis of parts of condition 4780 from toxics risk management policy to Regulation 2, Rule 5.	

Table IV-BQ

Table IV-BQ for S-607 Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Removed part 16 of condition 4780.	No longer applies to this source. Condition 4780 was revised under application 14456 (MEI Plant Expansion)

Table IV-BR

No changes were made to Table IV-BR for S-609 Acetone Truck Loading Rack.

Table IV-BS

Table IV-BS for S-620 HCl Truck Loading Operation has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

Table IV-TBD

Table IV-TBD for S-622 Tank Truck Loading of chlorinated pyridine (exempt) has been added to the draft permit and contains applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 8, Rule 2 requirements.	Organic Compounds – Miscellaneous Operations
Added Regulation 8, Rule 6 exemptions.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 5384.	

Table IV-TBD

Table IV-TBD for S-625 Perchloroethylene Expansion Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. S-209 has been removed from the table since it has been permanently shutdown.

Action	**Title/Description**
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Added detailed citations for 40 CFR Part 63 Subpart EEEE.	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

Table IV-BT

No changes were made to Table IV-BT for S-631 Portable Resin Dryer.

Table IV-BU

Table IV-BU for S-633 Water Treatment Carbon Beds Regeneration has been revised as shown below.

Action	Title/Description
Changed the basis of parts of condition 5722 from toxics risk management policy to Regulation 2, Rule 5.	

Table IV-BV

This table has been removed from the draft permit since S-638 Truck Mounted Transportable Pressure Tank has been permanently shutdown.

Table IV-BW

Table IV-BW for S-641 Groundwater Treatment Plant Decant Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-BX

Table IV-BX for S-644 and S-645 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production

Subpart NNNNN does not apply to S-644 and S-645 since the strength of the HCl stored in these tanks is less than 30 weight percent during normal operations (See 63.8985(a)).

Table IV-BY

Table IV-BY for S-646 Hydrochloric Acid Tank Truck Loading Operation has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added detailed citations for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

Table IV-BZ

Table IV-BZ for S-647 Catalytic Hydrogen Chloride Plant Followed by S-648, HCl Absorber E-277, Vents Abated by A-181, B-278 Packed Bed Column, Followed by A-182, B-279 Packed Bed Column,Followed by A-184, ME 290 A/B Carbon Beds, or S-336, Manufacturing Services Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.
36% HCl is no longer filled at S-646, therefore S-646 is not be subject to Subpart NNNNN. In the past, 20% acid from MS HAF was transferred into truck here. Also HCl acid from Trifluoro, AFTF and Vikane. SF does not produce aqueous HCl as Vikane did. Trifluoro and AFTF now produce aqueous HCl less than 30%.

Action	**Title/Description**
Added Regulation 1 requirements.	Public Nuisance
Added Regulation 8, Rule 2	Miscellaneous Operations
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production
BAAQMD Condition 8894	Added Regulation 2, Rule 5 requirements.

Table IV-BZ

Table IV-BZ for S-647 Catalytic Hydrogen Chloride Plant Followed by S-648, HCl Absorber E-277, Vents Abated by A-181, B-278 Packed Bed Column, Followed by A-182, B-279 Packed Bed Column,Followed by A-184, ME 290 A/B Carbon Beds, or S-336, Manufacturing Services Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Table IV-CA

Table IV-BZ for S-648, Hydrogen Chloride Absorber, E-277 Abated by A-181, B-278 Packed Bed Column, Followed by A-182, B-279 Packed Bed Column, Followed by A-184, ME 290 A/B Carbon Beds or S-336, Manufacturing Services Thermal OxidizerThermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	**Title/Description**
Added Regulation 1 requirements.	Public Nuisance
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production
BAAQMD Condition 8894	Added Regulation 2, Rule 5 requirements.

Table IV-CB

Table IV-CB source-specific Applicable Requirements S-649, 36% Hydrogen Chloride Acid Storage Tank, V-277 Abated by A-181, B-278 Packed Bed Column, followed by A-182, B-279 Packed Bed Column, followed by A-184, ME 290A/B Carbon Beds or S-336, Manufacturing Services Thermal Oxidizer.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production
BAAQMD Condition 8894	Added Regulation 2, Rule 5 requirements.

Table IV-CC

Table IV-CC source-specific Applicable Requirements S-650, 36% Hydrogen Chloride Acid Storage Tank, V-280A S-651, 36% Hydrogen Chloride Acid Storage Tank, V-280B S-652, 36% Hydrogen Chloride Acid Storage Tank, V-280C Abated by A-181, B-278 Packed Bed Column, followed by A-182, B-279 Packed Bed Column, followed by A-184, ME 290A/B Carbon Beds or S-336, Manufacturing Services Thermal Oxidizer.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations

Action	Title/Description
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production
BAAQMD Condition 8894	Added Regulation 2, Rule 5 requirements.

Table IV-CD

Table IV-CD source-specific Applicable Requirements S-654, Abrasi.ve Blasting Operation Abated by A-185, Eagle Containment Screens.

Action	Title/Description
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
BAAQMD Regulation 12, Rule 4 and SIP Regulation 12, Rule 4.	Miscellaneous Standards of Performance – Sandblasting (for unconfined blasting operations).
BAAQMD Condition 8591	Added Regulation 2, Rule 5 requirements.

Table IV-CE

Table IV-CE source-specific Applicable Requirements for tanks S-662, S-663, S-664 abated by Abated by A-192, Vent Recovery System, S-336, Manufacturing Services Thermal Oxidizer, S-389, Sym-Tet Thermal Oxidizer, or Pressure Valve Setting.

Action	Title/Description
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-CF

Deleted table.

Table IV-CG

Table IV-CG source-specific Applicable Requirements for tanks S-662, S-663, S-664 abated by Abated by A-192, Vent Recovery System, S-336, Manufacturing Services Thermal Oxidizer, S-389, Sym-Tet Thermal Oxidizer, or Pressure Valve Setting.

Action	Title/Description
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Added Regulation 8, Rule 6 and SIP Regulation 8, Rule 6.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added Subpart EEEE	NESHAPs: Organic Liquid Distribution (Non-

Action	Title/Description
	Gasoline)

Table IV-CH

No changes.

Table IV-CI

Table IV-CI source-specific Applicable Requirements for ground water treatment air stripper S-682 abated by S-336 or S389 thermal oxidizers.

Action	Title/Description
Added Regulation 8, Rule 47 and SIP Regulation 8, Rule 47.	Organic Compounds – Air Stripping and Soil Vapor Extraction Operation
Condition #14722	Added Regulation 2, Rule 5.

Deleted Tables IV-CJ, CK.

Table IV-CL

Table IV-CL source-specific Applicable Requirements for S-693, Distillation System abated by A-194, X-600 Venturi and A-195, B-615 Scrubber.

Action	Title/Description
Added Regulation 8, Rule 47 and SIP Regulation 8, Rule 47.	Organic Compounds – Air Stripping and Soil Vapor Extraction Operation
Condition #14722	Added Regulation 2, Rule 5.

Table IV-CL

Table IV-CL source-specific Applicable Requirements S-693, Distillation Abated by A-195, B-615 Scrubber.

Action	Title/Description
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscillaneous Operations
Added BAAQMD Regulation 8, Rule 10	Organic Compounds – Process Vessel Depressurization
Deleted Subpart NNNNNN	NESHAPs for Hydrochloric Acid Production.
Condition 15932	Added Regulation 2, Rule 5

Table IV-CM

Table IV-CM source-specific Applicable Requirements S-694, Reaction/HCL Absorption System Abated by A-195, B-615 Scrubber.

Action	Title/Description
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations
Added BAAQMD Regulation 8, Rule 10	Organic Compounds – Process Vessel Depressurization
Deleted Subpart NNNNNN	NESHAPs for Hydrochloric Acid Production.
Condition 15932	Added Regulation 2, Rule 5
Deleted Condition 31068	Part 3 Recordkeeping Requirements

Table IV-CN

Table IV-CN source-specific Applicable Requirements for tanks S-665.

Action	Title/Description
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-CO

Table IV-CO source-specific Applicable Requirements for tanks S-696, T-585.

Action	Title/Description
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-CP

Table IV-CP has no changes.

Table IV-CQ

Table IV-CQ has no changes.

Table IV-CR

Table IV-CR source-specific Applicable Requirements for tanks S-

701, T-12 vented to S-336 Manufacturing Services Thermal Oxidizer.

Action	**Title/Description**
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Revised Condition 16612	Added Regulation 2, Rule 5 requirements.

Table IV-CS

Table IV-CS source-specific Applicable Requirements for tanks S-704, D-12.

Action	**Title/Description**
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids

Table IV-CT

Table IV-CT source-specific Applicable Requirements S-705 Shot Blast Unit abated by A-198 Dust Collector.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations

Table IV-CU

Table IV-CU source-specific Applicable Requirements S-706 FPI Standby Generator (Diesel).

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added Regulation 9, Rule 1 requirements.	Inorganic Gaseous Pollutants – Sulfur Dioxide
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Deleted Condition 18317	
Added Subpart A	NESHAPs General Provisions
Added Subpart ZZZZ	NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE)
Added Section 93115, title 17, CCR	Airtoxics Control Measure for Stationary Compression Ignition Engines
Added Condition 22850	ATCM Conditions for Diesel Engines.

Table IV-CV

Table IV-CV source specific Applicable Requirements S-707, S-708, and S-711.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added Regulation 9, Rule 1 requirements.	Inorganic Gaseous Pollutants – Sulfur Dioxide
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Deleted Condition 18317	
Added Subpart A	NESHAPs General Provisions
Added Subpart ZZZZ	NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE)
Added Section 93115, title 17, CCR	Airtoxics Control Measure for Stationary Compression Ignition Engines
Added Condition 22851	ATCM Conditions for Diesel Engines.

Table IV-CW

Table IV-CW source specific Applicable Requirements for S-709 IC engine backup generator.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added Regulation 9, Rule 1 requirements.	Inorganic Gaseous Pollutants – Sulfur Dioxide
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Added Subpart A	NESHAPs General Provisions
Added Subpart ZZZZ	NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE)
Added Section 93115, title 17, CCR	Airtoxics Control Measure for Stationary Compression Ignition Engines
Added Condition 22851	ATCM Conditions for Diesel Engines.

Table IV-CX

Table IV-CX source specific Applicable Requirements for S-709 IC engine backup generator.

Action	**Title/Description**
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added Regulation 9, Rule 1 requirements.	Inorganic Gaseous Pollutants – Sulfur Dioxide

Action	Title/Description
Removed Subpart NNNNN	NESHAPs for Hydrochloric Acid Production
Revised Condition 20303	Added Regulation 2, Rule 5 requirements.

Subpart NNNNN does not apply since the HCL concentration is less than 30%. concentration by weight.

Table IV-TBD

Table IV-TBD source specific Applicable Requirements for S-718 IC Nitrapyrin Plant.

Action	Title/Description
Added Regulation 8, Rule 18 requirements.	Organic Compounds – Equipment Leaks
Added Condition 24763	Condition for Nitrapyrin Plant

Table IV-TBD

Table IV-TBD source specific Applicable Requirements for S-728, T-20 Ethylene Diamine Storage Pressure Tank.

Action	Title/Description
Added Regulation 8, Rule 5 and SIP Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Added Condition 24763	Condition for Nitrapyrin Plant

Table IV - TBD

Table IV-TBD source specific Applicable Requirements for S-1011 Auxiliary Boiler abated by A-1011 SCR.

Action	Title/Description
Added Regulation 1	General Provisions and Definitions.
Added Regulation 2, Rule 1	Permits General Requirements
Added Regulation 6-1-301 and SIP Regulation 6.	Miscellaneous Operations
Added Regulation 9, Rule 1.	Inorganic Gaseous Pollutants – Sulfur Dioxide
Added Regulation 9, Rule 3	Inorganic Gaseous Pollutants – Nitrogen Oxides From Heat Transfer Operations
Added Regulation 9, Rule 7 and SIP Regulation 9, Rule 7	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added MOP Volume V	Continuous Emission Monitoring Policy and

Action	Title/Description
	Procedures
Added Subpart A	General Provisions
Added Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
Added Condition 19356	Condition for Auxiliary Boiler

Table IV - CY

Table IV-CY source specific Applicable Requirements for Components.

Action	Title/Description
Revised Regulation 8, Rule 18 and SIP	Organic Compounds – Equipment Leaks
Added Regulation 8, Rule 28 and SIP	Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants

Table IV - CZ

Table IV-CZ was deleted due to equipment shutdown.

Table IV–DA

Table IV-DA source specific Applicable Requirements MACT for S-5, 720 Terminalized Products Fugitive Components S-346, T-241 Perchloroethylene Tank Fugitive Components S-372, T-20 Perchlorethylene Tank Fugitive Components Fugitive Components at T-70 and T-74 at N-Serve Plant S-44, S-461, S-462, S-463 Plant 663 Fugitive Components S-625, T-610 Perchloroethylene Expansion Tank Fugitive Components, S-680, T-440 Carbon Tetrachloride Pressure Tank Fugitive Components, S-446, Sym-Tet Plant Fugitive Components.

Action	Title/Description
Revised Subpart H	National Emissions Standard for Organic Hazardous Air Pollutants for Equipment Leaks.

Table IV–DB

Table IV-DB source specific Applicable Requirements MACT for Subpart I Equipment Leaks S-446 Sym-Tet Plant Fugitive Components.

Action	Title/Description
Revised Subpart I	National Emission Standard for Organic Hazardous Air Pollutants for Certain Processes

Action	Title/Description
	Subject to the Negotiated Regulation for Equipment Leaks

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10, which provides that a major facility review permit shall contain the following information and provisions:

409.10 A schedule of compliance containing the following elements:

10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;

10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and

10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted."

Since the District has not determined that the facility is out of compliance with any applicable requirement, the schedule of compliance for this permit contains only Sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division conducted a compliance review and found no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix A of this permit evaluation/statement of basis.

VI. Permit Conditions

Each permit condition is identified with a unique numerical identifier, up to five digits. The Title V permit contains all permit conditions for the permitted sources listed in Section II. During the Title V permit development, the District reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for consistency, clarity, and enforceability.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit. All changes to existing permit conditions due to the Title V review are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted; all "underline" language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new limits on sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a "modified source" as defined in District Regulation 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." Regulation 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits or emission limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding "emission level" for purposes of Sections 2-1-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as "grandfathered" sources), an "increase" in "emission level" is addressed in Section 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of either: 1) the design capacity of the source, 2) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is "bottlenecked"), then the relaxing of that limitation ("debottlenecking") is considered a modification.

Conditions have been deleted due to the following:

- Redundancy in recordkeeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.
- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).
- The condition is obsolete or no regulatory basis could be determined.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition, imposed by the APCO, which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.

- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

In researching the regulatory basis for several of the existing permit conditions for Dow, it was discovered that a number of significant permit applications are missing from District files. Without this original documentation of the operation, including the description of the process, operating practices, and the engineering evaluation, in some cases the bases for these conditions cannot be determined with complete certainty. The District is currently installing an electronic document management system, so if these application files have merely been incorrectly filed, they may be available for review in the future. However, at this time, the citation of basis for these conditions has been designated as Regulation 2-1-403, which provides the District general authority to impose permit conditions.

Also, Regulation 2-1-403 has been cited with an underlying emission standard for conditions imposed to assure compliance with an underlying standard, if the conditions are specifically tailored to the operation of a source, rather than contained in the emission standard itself. The underlying emission standard is the true basis for the permit condition, as the condition would not exist if the standard did not apply. However, the condition is the emission limit expressed in a manner that is more enforceable as a practical matter, based on the actual operation of the source.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

Changes to the permit:

Condition #1359 removed as source S-464 product dryer shutdown.

Condition #2039 revised to add latest application number to reflect the installation A-205, R-503 Carbon Monoxide Scrubber with additional minor text revisions.

Condition #3500 added for S-584 Drumming Station to be abated by A-139 Venturi Scrubber.

Condition #3712 removed due to equipment shutdown.

Condition #4780 revised in accordance with Application 14456 with minor text revisions.

Condition #4945 revised from Regulation 6 to Regulation 6, Rule 1.

Condition #5147 revised to add Regulation 2, Rule 5 instead of TRMP.

Condition #5377 deleted due to equipment shutdown.

Condition #5384 added for A-167 chlorinated pyridine truck loading equipment.

Condition #5385 revised to include Regulation 6, Rule 1.

Condition #5722 revised to include Regulation 2, Rule 5.

Condition #6074 added for S-450 & S-451 HCl Storage Tanks.

Condition #7775 revised to include Regulation 6, Rule 1.

Condition #8894 revised to include Regulation 2, Rule 5 with a request from the facility to alter monitoring language in part 11.

Condition #11054 revised in accordance with Application #23595.

Condition #11276 revised in accordance with Application #14909 and #21975.

Condition #14098 was deleted and was replaced by Condition 20666.

Condition #14354 was revised to make condition text more clear.

Condition #14722 was revised to include Regulation 2, Rule 5.

Condition #15932 was revised to include Regulation 2, Rule 5.

Condition #15944 was revised to include Regulation 6, Rule 1.

Condition #16610 was deleted due to equipment shutdown.

Condition #16612 was revised to include Regulation 2, Rule 5.

Condition #17878 was revised due to equipment shutdown.

Condition #17985 was revised as requested by the facility to make condition text clearer by adding owner/operator format and other minor changes.

Condition #18128 was deleted due to equipment shutdown as requested by the applicant and to make condition text clearer.

Condition #18317 was deleted and replaced with a ATCM standard condition #22850.

Condition #19356 was added to reflect the transfer of S-1011 auxilliary boiler from Calpine Gilroy back to Dow.

Condition #19724 was revised to reflect that three diesel engine were removed from the condition.

Condition #20301 Future was removed.

Condition #20302 Future was removed.

Condition #20303 Future was removed and the condition text was revised to owner/operator format with additional changes to the text to make the condition clearer.

Condition #20666 standard permit conditions were added as requested by the applicant to clarify reporting conditions.

Condition #20826 was revised to include Regulation 6, Rule 1 requirements.

Condition #21059 was revised due to the shutdown of S-209, S-222, S-345.

Condition #21060 was deleted due to a new version of Regulation 8, Rule 10 being adopted.

Condition #22830 was added as requested by the applicant for S-711 diesel engine to meet ATCM requirements.

Condition #22850 was added as requested by the applicant for S-706 diesel engine to meet ATCM requirements.

Condition #22851 was added as requested by the applicant for S-707, S-708 diesel engine to meet ATCM requirements.

Condition #23250 was added in accordance with Application 15133.

Condition #24289 was added under a permit application to limit gasoline throughput at S-174.

Condition #24763 which regulates S-718 Nitrapyrin plant has been added in accordance with Application #21858.

Condition #24779 was regulates S-483 Carbon Tetrachloride Loading was added in accordance with Application #21795.

VII. Applicable Limits and Compliance Monitoring Requirements

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit. Table VII B through D were combined with Table VII-A for the gas turbines and heat recovery steam generators since all of these sources are identical with similar applicable requirements and exhaust through a common stack.

The federal enforceability of all Table VII's were updated. Regulation 6, Rule 1 requirements were included in all tables and identified as non-federally enforceable.

Table VII-K Applicable Limits and Monitoring Requirements for the S-44 N-Serve Plant were revised as shown below:

Action	Title/Description
POC monitoring due to 8-2-301 updated.	
POC monitoring due to 8-10-301 updated.	

Table VII-TBD Applicable Limits and Monitoring Requirements were for S-161 Maintenance Exhaust Area M-1 as shown below:

Action	Title/Description
Added Regulation 8, Rule 19 monitoring requirements.	

Table VII-TBD Applicable Limits and Monitoring Requirements were for S-172 Maintenance Exhaust Area M-4 as shown below:

Action	Title/Description
Added Regulation 8, Rule 19 monitoring requirements.	

Table VII-N Applicable Limits and Monitoring Requirements for S-174 Gasoline Dispensing Facility were added as shown below:

Action	Title/Description
VOC Condition 14098 Part 1 requirements removed replaced by Condition 20666.	

Table VII-P table was deleted due to sources being shutdown.

Table VII-TBD Applicable Limits and Monitoring Requirements were for S-325 Dock Flush Toilet as shown below:

Action	Title/Description
Added Regulation 8, Rule 19 monitoring requirements.	

Table VII-AI was deleted due to equipment being shutdown.

Table VII-AJ was deleted due to equipment being shutdown.

Table VII-AV was deleted due to equipment being shutdown.

Table VII-BE was deleted due to equipment being shutdown.

Table VII-BF Applicable Limits and Monitoring Requirements for S-593, Plant 640 Section 1, Abated by A-146, NMP Scrubber and A-147, Water Scrubber S-594, Plant 640 Section 2, Abated by A-147, Water Scrubber S-595, Plant 640 Section 3, Abated by A-149, Water Scrubber S-596, Plant 640 Section 4, Abated by A-147, Water Scrubber and A-148, Water Scrubber Facility were added as shown below:

Action	**Title/Description**
VOC Condition 4708 Part 2 has been added.	4-amino-3,5 dichloro-2,6 diflouro pyridine from A-147 & A-149 □ 0.02 pounds/day
NH3 Condition 4708 Part 3 has been added.	NH3 emissions from MEI Plant 640

Table VII-BL was deleted due to equipment being shutdown.

Table VII-BV was deleted due to equipment being shutdown.

Table VII-BZ was deleted due to equipment being shutdown.

Table VII-CA was deleted due to equipment being shutdown.

Table VII-CI was deleted due to equipment being shutdown.

Table VII-TBD Applicable Limits and Monitoring Requirements were for S-706 FPI Standby Generator as shown below:

Action	**Title/Description**
Condition 22850 NOx, CO and PM monitoring requirements were added.	ATCM Condition

Table VII-CL had engines S-710 and S-711 removed from the table to change to ATCM compliant condition.

Table VII-CM was deleted due to equipment being shutdown.

Table VII-TBD Applicable Limits and Monitoring Requirements were for S-1011 Auxiliary Boiler as shown below:

Action	**Title/Description**
Condition 19536 monitoring requirements were added.	NOx, CO, NH3, PM10

Table VII-CP was deleted due to equipment being shutdown.

Table VII-TBD was added to document the monitoring associated with Subpart EEE (NESHAP for hazardous waste combustors).

Table VII-TBD was added to document the monitoring associated with Subpart MMM (NESHAP for pesticide active ingredient production PAI).

Table VII-TBD was added to document the monitoring associated with Subpart EEEE (NESHAP for hazardous waste combustors).

Table VII-TBD was added to document the monitoring associated with Subpart NNNNN (NESHAP for hydrogen chloride manufacturing).

Additional Monitoring Determinations

The tables below contain only the limits for which there is no monitoring or potentially inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

NOx Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-336, MS Thermal Oxidizer	Cond 6859, Pt 3	8.6 lbs/day as NO2	Source test once per permit term
S-444, Dowtherm Heater S-460, Dowtherm Heater	BAAQMD 9-7-301.1	30 ppmvd at 3% O2	Source test once per permit term

NOx Discussion:
S-336: This Thermal Oxidizer does not burn the nitrogen-containing waste products as is done at S-389, so the permit conditions for this source do not contain the stringent NOx emission limits and source testing requirements as in the permit for S-389. Exceedance of the daily NOx limit is not expected, as emissions are typically less than half of this limit. In fact, Dow requested an increase in the original NOx limit up to the current 8.6 lbs/day was permitted under Application 11902, to allow a larger margin of compliance between actual emissions and the permit limit.

Since the actual expected emissions from this source are approximately half of the emission limit, monitoring of this limit through a source test once per permit term has been deemed adequate.

S-444 and S-460: These units are fuelled exclusively with natural gas. They were both source tested in 1996 and S-444 again in 2000. All of the tests demonstrated compliance with the 30 ppm NOx limit. As the mode of operation for these units does not vary, periodic monitoring in the form of a source test once per permit term has been deemed adequate monitoring.

CO Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-389, ST Thermal Oxidizer	Cond 2039, Pt 4	250 ppm at 3% Ox	Semiannual source test
S-444, Dowtherm Heater	BAAQMD 9-7-301.2 Cond 11054, Pt 3	400 ppmvd at 3% O2 50 ppmvd at 3% O2	None None
S-460, Dowtherm Heater	BAAQMD 9-7-301.2	400 ppmvd at 3% O2	None

CO Discussion:
S-389: This source is currently tested twice a year to demonstrate compliance with the existing NOx limits. A requirement to also test for CO during these tests has been added as periodic monitoring for the 250 ppm CO limit contained in the permit conditions.

S-444 and S-460: These units are fuelled exclusively with natural gas. The CO emissions from these sources are extremely low, tested at below 1 ppm which is less than 1% of the limit for S-460 and only 2% of the more stringent limit for S-444. As the margin of compliance with the CO limits is very high, no monitoring is required.

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD 9-1-301 BAAQMD 9-1-304	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours Fuel Sulfur < 0.5% by weight	None

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-400, Experimental Thermal Oxidizer S-444, Dowtherm Heater S-460, Dowtherm Heater	BAAQMD 9-1-301 BAAQMD 9-1-302	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours SO2 < 300 ppm, dry	None
S-454, Vikane® Plant SO2 unloading and storage (exempt)	BAAQMD 9-1-301 BAAQMD 9-1-302	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours 300 ppm (dry)	None
S-706, Diesel Engine for FPI Standby Generator S-707, Diesel Engine Backup Generator P1A S-708, Diesel Engine Backup Generator P1B S-710, Diesel Engine Backup Generator 480A S-711, Diesel Engine Backup Generator 223	BAAQMD 9-1-301	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-709, IC Engine Backup Generator 461	BAAQMD 9-1-301 BAAQMD 9-1-304	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours Fuel Sulfur < 0.5% by weight	None
S-712, Sulfuryl Fluoride Plant	BAAQMD 9-1-301 BAAQMD 9-1-302	Ground level concentrations of SO2 ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours 300 ppm (dry)	No new monitoring (Existing caustic monitoring at scrubbers)

SO2 Discussion:
S-336, S-389, S-400, S-444, S-460: All combustion sources burning gaseous fuels are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. The Dowtherm Heaters and S-709 burn only natural gas. The Thermal Oxidizers also burn chlorinated compounds in addition to natural gas, but these materials do not contain sulfur. Therefore, no monitoring is necessary for Sections 9-1-301, 9-1-302, and 9-1-304 for these sources.

S-454 and exempt SO2 Loading/Storage: Liquefied SO2 is unloaded at an exempt rail car unloading operation and stored for in an exempt pressure tank for delivery to the Vikane® Plant. The unloading operation is abated by A-197 or A-46 caustic scrubbers, which keep the SO2 emissions from the offloading SO2 rail cars very low - a few pounds/year. Abatement efficiencies for these scrubbers are defined through permit conditions. The conditions contain existing monitoring requirements for minimum allowable caustic concentration and daily measurement, which has been deemed adequate monitoring.

The SO2 emissions from the Vikane® Plant, S-454, are also abated by the same scrubbers. The maximum expected SO2 stack concentrations are 0.5 ppm (see Appendix C), which is only 1% of the 300 ppm limit in BAAQMD Regulation 9-1-301. Due to the very low emissions from these unloading operation and the Vikane® Plant, no exceedances of the stack SO2 limit or the ground level concentration limit is expected. Area monitoring to demonstrate compliance with the ground level SO2 concentration requirements of Regulation 9-1-301 is required at the discretion of the APCO (Regulation 9-1-501). The level of emissions from this operation is not significant, and therefore the facility is not required to perform stack monitoring or ground level monitoring.

S-706, S-707, S-708, S-710, S-711: These emergency generators are used sporadically, only as a backup source of power during electrical curtailments. They are an insignificant source of sulfur dioxide. Due to the periodic and restricted nature of their use, area monitoring to demonstrate compliance with the ground level SO_2 is not required.

S-709: This emergency generator is fuelled on propane, which does not contain any sulfur. Therefore, the unit does not generate SO2 emissions, and no monitoring is necessary to demonstrate compliance with the sulfur dioxide limits in Regulation 9, Rule 1.

S-712: S-712 is the new Sulfuryl Fluoride production plant that replaced the old Vikane® Plant, S-454. The SO2 unloading and storage operations and the existing monitoring will remain the same when S-712 comes online. The reactor system of S-712 does have a continuous vent stream to the new abatement system, consisting of a venturi scrubber A-201 (95% SO2 abatement efficiency) followed by a packed bed absorber (99.9% abatement SO2 efficiency). Annual abated emissions from S-712 are expected to be less than 4 lbs/yr and the maximum expected SO2 stack concentrations are 11 ppm (see Appendix C), less than 1% of the 300 ppm limit in BAAQMD Regulation 9-1-301. Due to the very low emissions from the new Sulfuryl

Fluoride Plant, no exceedances of the stack SO2 limit or the ground level concentration limit are expected. Area monitoring to demonstrate compliance with the ground level SO2 concentration requirements of Regulation 9-1-301 is required at the discretion of the APCO (Regulation 9-1-501). The level of emissions from this operation is not significant, and therefore the facility is not required to perform stack monitoring or ground level monitoring.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-4, HCl Rail Tank Car Loading S-434, Manufacturing Services Facility S-454, Vikane® Plant S-712, Sulfuryl Fluoride Plant	BAAQMD 6-301	Ringelmann 1.0	No new monitoring (Existing caustic and temperature monitoring)
S-40, Water Treatment HCl Storage T-24 S-135 through S-140, HCl Storage Tanks S-402, HCl Storage Tank S-449, T-30 HCl Storage Tank S-530, HCl Storage Tank S-644, Hydrochloric Acid Storage Tank T-34A S-645, Hydrochloric Acid Storage Tank T-34B S-646, HCl Tank Truck Loading	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None
S-44, N-Serve® Plant S-446, Sym-Tet Plant	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	A-88/A-89: None A-88/A-89: None A-88/A-89: None
S-176, Chloralkali Cooling Tower S-177, Chloralkali Cooling Tower S-178, Chloralkali Cooling Tower S-179, Chloralkali Cooling Tower	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None None None
S-286, Railcar Purging Facility S-620, HCl Truck Loading	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if loading None None
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None
S-400, Experimental Thermal Oxidizer	BAAQMD 6-301 BAAQMD 6-310	Ringelmann 1.0 0.15 gr/dscf	None None

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-444, Dowtherm Heater S-460, Dowtherm Heater	BAAQMD 6-301 BAAQMD 6-310	Ringelmann 1.0 0.15 gr/dscf	None None
S-461, Plant 663 R-401 Reactor S-462, Plant 663 R-402 Reactor S-463, Plant 663 F-403 Separator	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if operating None None
S-464, Product Dryer	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None None None
S-474, Plant 421 Verdict S-476, Plant 421 Trifluoro	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if loading None None
S-576, HCl Storage Tank	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	No new monitoring (Existing caustic monitoring)
S-648, Hydrogen Chloride Absorber E-277 S-649, Hydrogen Chloride Acid Storage Tank, V-277	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None None None
S-650, Hydrogen Chloride Acid Storage Tank, V-280A S-651, Hydrogen Chloride Acid Storage Tank, V-280B S-652, Hydrogen Chloride Acid Storage Tank, V-280C	BAAQMD 6-301 BAAQMD 6-310 BAAQMD 6-311	Ringelmann 1.0 0.15 gr/dscf $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None None None
S-654, Abrasive Blasting	BAAQMD 6-301 BAAQMD 6-311 BAAQMD 12-4-301 BAAQMD 12-4-302 SIP 12-4-301 BAAQMD 12-4-305.1, 12-4-305.2	Ringelmann 1.0 $4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr Ringelmann 1.0 Ringelmann 2.0 Ringelmann 1.0 1% weight #70 US Standard Sieve material/ 1.8% weight 5 micron or smaller material	Inspection of Screens None None None None Use of certified abrasives only

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-706, FPI Standby Generator	BAAQMD 6-303	Ringelmann 2.0	None
S-707, Diesel Engine Backup Generator	BAAQMD 6-310	0.15 gr/dscf	None
S-708, Diesel Engine Backup Generator			
S-709, IC Engine Backup Generator			
S-710, Diesel Engine Backup Generator			
S-711, Diesel Engine Backup Generator			

PM Discussion:
This facility has had no history of visible emission or particulate nuisance violations. Regulation 6-305 prohibits nuisance fallout on property offsite. As the section is measured offsite, there is no manner for Dow or any facility to 'monitor' compliance with this standard, except to comply with and monitor compliance with the other Regulation 6 standards for opacity and applicable emission rates. Therefore, Regulation 6-305 was not included in any tables in Section VII of the permit.

Many of the following sources subject to Regulation 6 requirements are subject due to potential emissions of hydrochloric acid, as particulate matter - acid mist. Dow has indicated that the acid emissions from these sources is *acid vapor*, and not acid particulate for the following reasons:

- Mist Formation by Mechanical Means: HCl-water mists could be generated mechanically at very high vapor flow rates in a two-phase system. The velocity necessary for this to occur is over 70 fps (Chemical Engineers Handbook, 5th Ed pp5-42). *None of the HCl systems at Dow are operated at this high flowrate and therefore are not expected to produce acid mists mechanically.*
- Mist Formation by Reaction: Mist could possibly be produced by chemical reaction of concentrated acid vapor coming into contact with moisture in the atmosphere. For example, the vapor space in a tank containing 36% hydrochloric acid at 30 degrees C would contain 188 mmHg acid and only 6.1 mmHg water (Perry's Chemical Engineering Handbook). This is essentially an anhydrous acid vapor. If this were vented to atmosphere (breathing or working losses), the acid would contact water in the outside air, react with the water, and could produce a fog. *None of the concentrated HCl streams at Dow are vented directly to the atmosphere and are therefore not expected to produce acid mists by reaction.*
- Mist Formation by Supersaturation: In absorption processes, aerosols can be formed by condensation in a supersaturated gas. Saturation is defined as the partial pressure of the condensing components divided by the equilibrium partial pressure of the condensing components. Supersaturation indicates a saturation value greater than 1.0 and must reach a critical value (2.5-3.5 for HCl-water system) before molecules can form stable clusters, or nuclei. If the rate of heat transfer in an HCl-water absorber is excessive in comparison

to the rate of mass transfer then a supersaturated vapor could form. This is more likely to occur in concentrated HCl-water systems and where the temperature of the HCl is significantly different than the temperature of the aqueous solvent. *The temperatures of the HCl gas streams at Dow are not significantly different than the temperature of the absorbent water and are therefore not expected to produce acid mists by supersaturation.*

The District has no physical source test data to demonstrate how much, if any, of the acid emissions are particulate, as opposed to acid vapor. Also, there are no emission factors in EPA's AP42 Compilation of Air Pollution Emission Factors, or guidance in the proposed HCl MACT, that could be used to estimate acid mist emissions. Under these circumstances, District policy is to make the most conservative assumption regarding emissions, that which will result in evaluation of the maximum potential emissions. Therefore, as in previous NSR evaluations, the cases below assume all acid emissions are emitted as particulate.

S-4, S-434, S-454, S-712: These operations are subject to the BAAQMD Regulation 6 visible emission standard due to potential particulate emissions from acid mist, HCl. The operations are abated at a scrubbing system or a thermal oxidizer followed by a scrubbing system. HCl is readily neutralized, therefore, no acid mist emissions, including visible emissions, are expected from the scrubbers. Although not opacity monitoring, the existing monitoring of caustic concentration or temperature has been deemed adequate surrogate monitoring by ensuring complete neutralization of HCl, the only contributor to visible emissions.

HCl Storage Tanks S-40, S-135 through S-140, S-402, S-449, S-530, and S-644 through S-646, HCl Storage Tanks and Loading: These tanks and the tank loading operation are subject to BAAQMD Regulation 6 visible and emission standards due to potential emissions from acid mist. Maximum particulate emissions from these tanks are calculated in Appendix C. Because of the large margin of compliance between the maximum emissions and the limits in Regulation 6 with most emissions much less than 1% of the limits and the largest being less than 10% of the limit, periodic monitoring of these sources for particulate and visible emissions is not required.

S-402 and S-530 are currently out of service therefore have no emissions. S-646 is the truck loading station for the HCl in the tanks S-644 and S-645. The loading operation is vapor-balanced back to the tanks, through A-180, therefore the loading is not expected to have any emissions to the atmosphere. Therefore, no monitoring has been required for these sources.

S-44, S-446: These plants are subject to BAAQMD Regulation 6 visible and emission standards due to potential particulate emissions from acid mist, HCl. The primary abatement for these operations is a thermal oxidizer followed by a scrubbing system, with a backup scrubbing system when the oxidizer is down for maintenance. Particulate monitoring for the primary abatement system has been addressed under S-389. When abated by the backup scrubbers A-88 or A-89, no monitoring has been required due to the low level of particulate emissions and the large margin of compliance between the maximum expected emissions and the regulatory limits in Regulation 6 (see Appendix C), no new monitoring has been deemed necessary for these limits.

S-176 through S-179: These sources are subject to BAAQMD Regulation 6 visible and emission standards. Maximum particulate emissions from these four cooling towers are

calculated in Appendix C. The emissions are based upon the cooling tower water circulation rates and exhaust airflow rates supplied by Dow, and the emission factors from EPA AP-42 Compilation of Air Pollution Emission Factors. These factors have been used to determine a conservative maximum outlet grain loading and hourly emission rate. The maximum PM10 outlet grain loading at each tower is calculated to be 0.005 grains per dry standard cubic feet of exhaust, which is only 3% of the limit of 0.15 grains per dry standard cubic feet in BAAQMD Regulation 6. The maximum hourly emission rate from each source is less than 4 lbs/hour, which is less than 10% of the 40 lbs/hour limit in BAAQMD Regulation 6. Because of the conservative nature of these calculations and the large margin of compliance between the maximum emissions and the limits in Regulation 6, periodic monitoring of these sources for particulate and visible emissions is not required.

S-286, S-620: These operations are subject to BAAQMD Regulation 6 visible and emission standards due to potential particulate emissions from acid mist, HCl. Railcar purging, S-286, is performed within a building, and the exhaust flowrates from S-286 and S-620 are quite low, so the operation of these sources is not expected to generate particulate emissions. No calculations have been included for Regulation 6-310 due to the fact that the vents from the process have associated flowrates that are too low to measure under source test conditions. Further, each of the operations is abated by a scrubbing system, so any acid emissions produced would be neutralized. Therefore, no visible or particulate emissions are expected. However, since the operation of the scrubbers is not monitored in any other form, periodic monitoring in the form of a daily visual emissions check has been added.

S-336, S-389: These operations are subject to BAAQMD Regulation 6 visible and emission standards due to particulate emissions consisting of natural gas combustion (primary fuel), combustion products due to incineration of waste streams, and potential acid mist emissions, HCl. The majority of the acid in the exhaust streams from these sources is captured through a series of absorbers and scrubbers. These two oxidizers have been source tested recently for the Trial Burns for the RCRA permitting process. The particulate emissions from these sources were demonstrated to be less than 10% of the Regulation 6 emission limits on outlet grain loading and process weight rate. (See Appendix C) Both oxidizers have high operating temperature requirements to assure complete combustion and are equipped with continuous temperature monitors to track this. Due to this large margin of compliance and the monitoring currently in place, additional periodic monitoring of these sources for visible and particulate emissions is not required.

S-400: This source is subject to the visible and emission standards in Regulation 6. Only gaseous fuels are combusted at S-400. Visible emissions are normally not associated with combustion of gaseous fuels, as supported by EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP." Therefore no additional monitoring is required.

S-444, S-460: These sources burn natural gas exclusively and are subject to the visible and outlet grain loading limits in Regulation 6. Visible emissions and exceedances of particulate standards are normally not associated with combustion of gaseous fuels. This is confirmed by the calculations of potential to emit based on conservative AP42 factors in Appendix C. (The AP-42 emission factor contains condensable particulate matter, while the District standard does

not. Therefore, the margin of compliance is higher than indicated.) Per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP" and EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," no monitoring is required to assure compliance with these limits for these sources.

S-461, S-462, S-463: These sources are subject to the visible and particulate emission standards in Regulation 6. Lontrel, an insoluble organic acid, is produced at these sources by reaction of a chlorinated pyridine with aqueous sulfuric acid. The reaction produces HCl as a byproduct. Lontrel remains in solution throughout the processing at these sources, so particulate emissions from product loss are not expected here. Particulate emissions due are possible due to acid mist. However, the acid emissions are abated with an acid absorber and tails tower, A-96, which has an efficiency of greater than 99% by weight. (This operation is subject to the PAI MACT, which requires 94% control.) Particulate emissions are calculated in Appendix C. The maximum potential particulate emissions for S-461 and S-462 are much less than the limits in Regulation 6-310 and 6-311, approximately 4% and 0.001% respectively. Due to this large margin of compliance, no monitoring is necessary for these limits. Periodic monitoring for visible emissions in the form of a daily visual emissions check has been added to the permit.

Any particulate emissions from S-463 would be due to displacement of the vapor during filling from S-462. The solution in S-463 is sulfuric acid of up to 35% strength. The concentration of sulfuric acid in the displaced vapor can be calculated from the vapor pressure of sulfuric acid above the residual solution divided by the total vapor pressure. However, sulfuric acid almost completely dissociates in water, so the corresponding vapor pressure is essentially zero. Therefore, the particulate emissions from this source are insignificant.

S-464: This source is subject to the visible and particulate emission standards in Regulation 6. This product dryer is abated by a bag filter, A-95, followed by a chilled condenser and liquid ring vacuum pump, A-114 and is located inside a building. Due to the operation of the abatement devices and the fact that any particulate emissions would occur within a building, no monitoring for visible emissions has been added. Particulate emissions, hourly and outlet grain loading have been calculated in Appendix C, based on a high AP-42 emission factor. Due to the conservative nature of the emission calculations, the resulting low emissions, and high margin of compliance (maximum emissions less than 1% and less than 3% of the Regulation 6 limits), no monitoring has been required.

S-474, S-476: These operations are subject to BAAQMD Regulation 6 visible and emission standards due to potential particulate emissions from acid mist, HCl. S-474 is abated by two organic scrubbers in series, A-98 and A-99, followed by a falling film absorber, A-101 HCl absorber, followed by a secondary HCl scrubber, A-102 tails tower. The backup abatement system for S-474 is A-100. S-476 is abated by an organic scrubber, A-97, followed by a caustic scrubber, A-101. HCl emissions are calculated in Appendix C, and due to the large margin of compliance between the standards in Regulation 6 and the calculated emissions, no emission monitoring has been added. Visible emission monitoring in the form of a daily check has been added to the permit.

S-576: This HCl tank is abated by a series of scrubbers. The final scrubber already operates under permit conditions specifying a minimum caustic concentration with daily monitoring. HCl is readily neutralized, therefore, no acid mist emissions, including visible emissions, are expected from the scrubbers. The existing monitoring of caustic concentration has been deemed adequate surrogate monitoring for Regulation 6 requirements by ensuring complete neutralization of HCl, the only contributor to visible emissions.

S-648, S-649: These sources are subject to the visible and emission standards in Regulation 6. The potential particulate emissions from the source are from HCl, acid mist. The sources are vented to two packed bed scrubbers in series, A-181 and A-182, followed by abatement at carbon beds, S-184 or the Manufacturing Services Thermal Oxidizer, S-336. When the emissions are routed from A-182 to S-336, they are further abated by the series of scrubbers following the thermal oxidizer before being emitted to the atmosphere. Monitoring under this mode of operation has already been addressed under S-336. Emissions for when the sources are vented from the scrubbers to the carbon beds are calculated in Appendix C. Due to the extremely low potential emissions under this mode of operation and the large margin of compliance, no monitoring has been deemed necessary for the visible or emission limits in Regulation 6.

S-650, S-651, S-652: These sources are subject to the visible and emission standards in Regulation 6. The potential particulate emissions from the source are from HCl, acid mist. These sources are loaded from the check tank S-649 and vapor balanced back to this tank. Therefore, there are no expected emissions to the atmosphere from these three tanks. The emissions vented back to S-649 are addressed by the calculations and discussion above. No monitoring is required for these tanks.

S-654: The source covers both confined and unconfined blasting. The confined blasting, occurs inside a building and is abated by containment screens with a rated abatement efficiency of 95%. This is a passive abatement system with no fan or exhaust to the outside. The operation is subject to the visible and emission limits of Regulation 6, which only apply outside of the building. No visible emissions or exceedances of the particulate process weight standard are expected as long as the containment screens are properly maintained. Periodic monitoring in the form of weekly inspections to ensure the integrity of the screens has been added to the permit.

The unconfined blasting permitted under this source is subject to the generally applicable visual emission standards and the abrasive standards in BAAQMD Regulation 12-4-305.1 and 12-4-305.2. The abrasive standards are derived from the CARB test method for certifying abrasives, so all certified abrasives have already been determined to meet these standards. A permit condition allowing only used of certified abrasives for unconfined blasting has been added to the permit to ensure compliance with these standards. This restriction was also deemed BACT during the original NSR permit evaluation, and should have been an express condition of the permit.

The visual emission standards for unconfined blasting are usually listed as generally applicable requirements in the Title V permits, since unconfined blasting occurs at all facilities and is usually not a permitted source. Since unconfined blasting is an infrequent operation and treated

as a generally applicable requirement, no formal visual emission checks have been deemed necessary.

S-706 through S-711: S-709 burns propane exclusively. Visible emissions and exceedances of particulate standards are normally not associated with combustion of gaseous fuels, as confirmed by the potential to emit calculation based on the conservative AP42 particulate factor in Appendix C. (The AP-42 emission factor contains condensable particulate matter, while the District standard does not. Therefore, the margin of compliance is higher than indicated.) Therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP" and EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," no monitoring is required to assure compliance with these limits.

The remaining generators are diesel-fuelled. The emissions are calculated in Appendix C. All of the diesel engines comply with the grain loading standard in Regulation 6. Due to the periodic and restricted nature of their use (for backup power in case of emergencies only), no monitoring has been deemed necessary for the visible and particulate emission standards.

VOC Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-5, 720 Terminalized Products S-7, 725 Block Truck Loading S-482, Carbon Tetrachloride Rail Car Loading	BAAQMD 8-6-305, 306 and/or Cond 11276, Pt 2	Vapor tight, leak free, good working order	Prior to loading, confirm vapor return line has a vacuum and the connection to tank truck or railcar is leak tight
S-6, 725 Terminalized Products	Cond 11276, Pt 2	Vapor tight, leak free, good working order	Prior to loading, confirm vapor return line has a vacuum and the connection to tank truck or railcar is leak tight
S-44, N-Serve® Plant S-446, Sym-Tet Plant	BAAQMD 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	When abated by A-88/A-89: None
S-161, Maintenance Paint Booth M-1	BAAQMD 8-19-302, 8-19-320	< 2.8 pounds/gallon, excluding water, clean-up solvent <0.42 lb./gal	Recordkeeping
S-174, Maintenance Paint Booth M-4	BAAQMD 8-19-320	< 2.8 pounds/gallon, excluding water	Recordkeeping

VOC Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-229, Latex Plant Tank Car Unloading	BAAQMD 8-6-302.1 8-6-302.2 8-6-304 BAAQMD 8-6-305, 306	< 0.35 lb/1000 gallons loaded < 0.35 lb/1000 gallons loaded < 0.17 lb/1000 gallons loaded Vapor tight, leak free, good working order	Prior to loading, confirm vapor balance system is properly connected.
S-325, Dock Flush Tank	BAAQMD 8-19-302, 8-19-320	< 2.8 pounds/gallon, excluding water, clean-up solvent <0.42 lb./gal	Recordkeeping
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD Regulation 8-2-301 Cond 6859, Part 4 Cond 2039, Part 5	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 99.99% destruction efficiency	No new monitoring (existing temperature monitoring)
S-400, Experimental Thermal Oxidizer	BAAQMD Regulation 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	Temperature Monitor
S-474, Plant 421 Verdict S-476, Plant 421 Trifluoru	BAAQMD Regulation 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	None
S-489, Latex Still B-100	Cond 16610, Pt 4	346 lbs styrene/day from A-42	None
S-504, Chlorinolysis Train 1	BAAQMD Regulation 8-2-301 Cond 2213, Pt 4	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 15.75 lbs/hour before abatement	A-121: Temperature monitor S-400: Temperature monitor Measurement and calculation of maximum feed rate
S-505, Chlorinolysis Train 2	BAAQMD Regulation 8-2-301 Cond 2213, Pt 5	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 1.5 lbs/hour before abatement	A-121: Temperature monitor S-400: Temperature monitor None
S-519, Chlorinated Pyridine Storage Tank, T-502A S-520, Chlorinated Pyridine Storage Tank, T-501B	BAAQMD Regulation 8-5-307 Condition 1748, Part 2	Gas tight/No detectable emissions	None
S-580, Specialty Chemicals Storage Tank T-3A S-581, Specialty Chemicals Storage Tank T-3B S-582, Specialty Chemicals Storage Tank T-215 S-583, Specialty Chemicals Storage Tank T-200	BAAQMD Regulation 8-6-304	< 0.17 lb/1000 gallons loaded	None
S-593, Plant 640 Section 1 S-594, Plant 640 Section 2 S-595, Plant 640 Section 3 S-596, Plant 640 Section 4	BAAQMD Regulation 8-2-301 Cond 4780, Pt 1	15 lbs/day and 300 ppm total carbon, dry 8 lbs/day	Source test once per permit term

VOC Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-609, Acetone Truck Loading Rack	BAAQMD 8-6-305, 306	Vapor tight, leak free, good working order	Prior to loading, confirm vapor return line has a vacuum and the connection to tank truck or railcar is leak tight
S-638, Truck Mounted Bulk Transportable Pressure Tank X-205	BAAQMD 8-5-307 BAAQMD 8-6-302.1	Gas tight condition < 0.35 lb/1000 gallons loaded	Quarterly checks if operated within the quarter None
S-680, Pressure Tank T-440 S-701, T-12 at Manufacturing Services	BAAQMD Regulation 8-6-304	< 0.17 lb/1000 gallons loaded	None
S-681, Truck Transfer	BAAQMD 8-6-302.1 8-6-302.2 8-6-304 8-6-305, 306	< 0.35 lb/1000 gallons loaded < 0.35 lb/1000 gallons loaded < 0.17 lb/1000 gallons loaded Vapor tight, leak free, good working order	Leak check prior to loading
S-697, ISO Container Loading Operation	Cond 15932, Pt 11	Vapor balance required	Prior to loading, confirm vapor return line is properly connected

VOC Discussion:
S-5, S-6, S-7, S-482, S-609, S-681, S-697: These loading operations are subject to leak tight provisions. Monitoring has been added which requires checking for proper operation of the vapor return line and all connectors prior to loading.

S-44, S-446: The continuous vent stream from N-Serve® (S-44) and Symtet (S-446) is commingled and is sent to S-389, the primary abatement system. The abatement efficiency of S-389 is tracked through a minimum temperature requirement and a continuous temperature monitor. When S-389 is down for maintenance, the vents are directed to the process recovery system (PRS) and then to the abatement devices A-88 or A-89. The PRS is designed and operated to achieve greater than 99.9% removal of organic compounds, therefore the organic content in the vent stream flowing to A-88 and A-89 is very low. This occurs only 21 days a year, on average. After abatement, the total carbon emissions through A-88 or A-89 are <0.1 lb/day, which is less than 1% of the 15 lbs carbon/day limit in Regulation 8 Rule 2. (See Appendix C) Due to the large margin of compliance, no monitoring is necessary for either A-88 or A-89.

S-229: This tank car unloading operation is vapor-balanced. Further, it is equipped with dripless fittings at both the vapor and liquid connections to the railcar and a nitrogen purge is used to clear the unloading fittings before removal from the railcar. The fitting and nitrogen purge are expected to reduce loading emissions to well below the leak standards in Regulation 8-6-302.1, 302.2, 304, 305, and 306. A condition requiring a leak check before unloading has been added as monitoring for this source.

S-336, S-389: These sources are currently subject to monitoring requirements for VOC emissions. The minimum VOC destruction efficiency achieved by these thermal oxidizers is specified by permit condition to be at least 99.99%. Compliance with this destruction efficiency is currently monitored through minimum operating temperatures of 1745 and 1830 degrees F respectively, measured by continuous temperature monitors.

Compliance with the destruction efficiency requirements was recently demonstrated by source testing during Trial Burns for the RCRA permitting process, the results of which have been used to meet the Latex MACT Performance Test requirements. For the S-336, the minimum temperature in the existing permit condition is lower than the minimum temperature established during the Trial Burns. Both the temperature in the existing condition and the minimum temperature of 986 degrees C (1806 degrees F) for the MACT will apply. These units will also be subject to the Boiler and Industrial Furnace MACT and will be required to demonstrate compliance with that MACT rule within 5 years of promulgation date of October 12, 2005.

S-400: This source is equipped with a temperature monitor. Permit conditions have been added to formalize the temperature monitoring and a minimum temperature of 800 degrees C. This source was tested at a first pass temperature of 706 degrees C and demonstrated a destruction efficiency of 99%. Since the minimum required temperature is higher than that during the source test, and since the destruction efficiency required to meet the Regulation 8-2 emission limit is only 64% (see Appendix C) and the temperature required to meet Regulation 8-5-306 is only 95% (S-400 abates tank S-372), this minimum temperature requirement and monitoring will assure compliance with §8-2-301 and §8-5-306.

S-474, S-476: The VOC emissions from these sources are very small, less than 1 lb/day. The calculations are contained in Appendix C and are based upon the partial pressure of the organic compound (halogenated pyridine) and assumes the liquid phase is in equilibrium with the vapor stream. The maximum emissions from S-474 are less than 4% of the 15 lbs carbon/day in Regulation 8-2, and this estimate is conservative as the emissions are vented through 2 additional water scrubbers prior to exhausting to the atmosphere. The maximum emissions from S-476 are less than 1% of the 15 lbs carbon/day in Regulation 8-2. Therefore, due to the large margin of compliance between the maximum expected emissions and the emission limit, monitoring is not required for these sources.

S-504, S-505: These sources are subject to the emission limit in Regulation 8, Rule 2, as well as hourly emission limits by permit condition. They are abated by either S-400, Experimental Thermal Oxidizer, before abatement at an absorber and a scrubber. Both S-400 and A-121 are equipped with temperature monitors, and the requirements to continuously monitor temperature for S-400 and A-121 have been formalized in the permit conditions. In addition, periodic monitoring has been added for S-504. This monitoring plan requires measurement of the VOC content for each batch of water processed and calculation of a corresponding treatment rate which will assure compliance with the hourly permit condition limit. The maximum potential emissions S-505 are less than 6% of the hourly permit condition limit, therefore no additional monitoring has been required (see Appendix C).

S-519, S-520: These tanks are subject to the gas tight requirements in Regulation 8-5-307. Normally tanks subject to this condition are monitored through Regualtion 8-18 requirements, but these tanks are exempt from the monitoring in Regulation 8-18 due to containing waste material with a boiling point higher than limited exemption qualification of 302 degreesF. No monitoring is being required for this limit.

S-580 through S-583: These tanks are subject to the leak limit in Regulation 8-6-304 during loading from railcars. They are equipped with a vapor balance system. The District's Source Test staff has indicated that vapor balance systems reliably meet the emission rate of 0.17 lbs/1000 gallons loaded for materials with a reid vapor pressure under 10 psi, therefore no monitoring is being required for this limit.

S-593 through S-596: There is no current monitoring required for the daily VOC emission limits in Regulation 8, Rule 2 and the permit conditions for these sources. The expected emissions are less than 3 lbs/day POC, compared to the 15 lbs/day limit in Rule 8-2. Periodic monitoring in the form of a source test once/permit term has been added for these sources.

S-680, S-701: The tanks S-680 and S-701 are subject to the loading leak limit in Regulation 8-6-304. S-701 normally vents to S-336, Thermal Oxidizer, which achieves an abatement efficiency of 99.99% by weight and operates with a continuous temperature monitor. When S-336 is not operating, the vent valve for S-701 automatically closes and the vessel operates as a pressure tank. S-680 is operated as a pressure tank at all times. For these two tanks, no monitoring is being required for the standard in Regulation 8-6-304, since pressure tanks are operated to have no emissions to the atmosphere.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

IX. Permit Shield

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has neither type of permit shield.

D. Alternate Operating Scenarios

No alternate operating scenario has been requested for this facility.

E. Compliance Status

A May 12, 2003 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services (now Engineering Services), presents a review of the compliance record of Dow Chemical Company (Site #A0031). The Compliance and Enforcement Division staff has reviewed the records for Dow Chemical Company for the period between May 2, 2002 through May 2, 2003. This review was initiated as part of the District evaluation Dow Chemical Company's application for a Title V permit. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued during this review period.
- The District did not receive any alleged complaints.
- The facility is not operating under a Variance or an Order of Abatement from the District Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

The Responsible Official certified that all equipment was operating in compliance on July 18, 1996. No issues concerning non-compliance have been identified to date.

F. Differences between the Application and the Proposed Permit

The Title V permit application was originally submitted on July 22, 1996. This version of the application, the applicable requirements update submitted on May 15, 2003, and correspondence exchanged with Dow Chemical during the Title V review is the basis for constructing the proposed Title V permit. Some differences between the initial application and the proposed permit are due to changes at the facility made pursuant to permit applications received during this period, as well as closure and sale of certain sources and abatement devices. Changes to the source list due to additions and closures, as well as differences in permit status between the application and the proposed permit have been noted in detail in Section II of this document.

Proposed changes in the existing permit conditions identified in the permit are those changes occurring due to the Title V review. Any changes in permit conditions that occurred due to permitting and permit condition modifications since the initial submittal of the permit application have not been identified in the proposed permit.

Several new MACT standards have been issued since submittal of the original Title V application, and District regulations have been revised in a manner concerning both permit exemptions and required emission limits and/or controls. The changes in District regulations and the new federal requirements are reflected in the proposed permit itself.

APPENDIX A

BAAQMD COMPLIANCE REPORT

COMPLIANCE & ENFORCEMENT DIVISION

Inter-Office Memorandum

September 6, 2012

TO: JIM KARAS – DIRECTOR OF ENGINEERING

FROM: RICHARD LEW – ACTING DIRECTOR OF COMPLIANCE & ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

DOW CHEMICAL COMPANY; SITE #A0031

Background

This review was initiated as part of the District evaluation of an application by DOW CHEMICAL COMPANY for a Title V Permit Renewal. The review is to ensure that any non-compliance problems identified, during the prior five-year permit term, have been adequately addressed, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit. In addition the Compliance and Enforcement Division, checks for patterns of recurring violation that may be addressed by additional permit terms.

DOW CHEMICAL COMPANY has both manufacturing and research facilities supporting DOW AgroSciences and Performance Chemicals. The DOW Pittsburg facility is powered by electricity and steam energy from Calpine, as well as solar power from a nearby solar farm. The facility is comprised of an array of individual chemical manufacturing units as well as numerous chemical storage tanks. The facility operates two hazardous waste combustors. Continuous Emission Monitors and other monitoring programs are in place to measure applicable pollutants.

Compliance Review

Compliance records were reviewed for the time period from October 2005 through August 2012. The results of this review are summarized as follows.

1. Violation History

Staff reviewed DOW CHEMICAL COMPANY Annual Compliance Certifications and found no ongoing non-compliance and no recurring pattern of violations.

Staff also reviewed the District compliance records for the review period. During this period DOW CHEMICAL COMPANY activities known to the District include:

District-issued 9 Notice of Violation(s):

NOV#	Regulation	Date Occur	# of Days	Comments	Disposition
A46819A	2-6-307	7/24/06	1	Permit Condition (P/C) #18128.2	Resolved
A46820A	2-6-307	10/9/06	1	Exceeded P/C #05148.2	Resolved
A49227A	2-6-307	6/25/07	1	Exceeded P/C #17985.2	Resolved
A49162A	8-18-401	10/1/07	3	Failed quarterly leak testing	Resolved
A49156A	2-6-307	10/22/07	2	Failed to meet P/C #8894.11, #8894.12	Resolved
A50406A	2-6-307	5/15/10	1	Excess of 3-hr Oxides of Nitrogen (NOx) limit	Pending
A50406B	1-522.7	5/15/10	1	Late reporting	Pending
A50416A	8-5-307.3	8/1/11	1	Pressure relief device (PRD) not in gas tight condition	Pending
A52262A	2-6-307	3/7/12	39	A-205 failed to abate A-77	Pending
A52262A	2-1-3076	4/22/12	2	A-77 in startup mode > 30 minutes, history query found addition 299 hrs in violation	Pending

2. Complaint History

The District received three air pollution complaints alleging DOW CHEMICAL COMPANY as the source.

3. Reportable Compliance Activity

Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, inoperative monitor reports and flare monitoring.

Within the review period, the District received 10 notifications for RCA's. 2 NOVs were issued as a result of these RCA's.

The District received 10 notifications for Reportable Compliance Activities (RCA).

Episode	Date Occur	# of Days	Comments	Disposition
04W28	8/6/06	1	Parametric temperature (temp) excursion	No Action
04X12	10/9/06	1	Parametric temp. excursion	Issued NOV #A46820
04Z85	4/5/07	1	Pressure Safety Valve (PSV) lift due to over-pressurization	No Action

05A41	5/15/07	1	PSV lift during unit startup due to over-pressurization	No Action
05E56	3/3/08	1	PSV lift due to over-pressurization	No Action
05N50	7/31/09	1	PSV lift due to over-pressurization	No Action
05R25	12/30/09	1	PSV lift due to over-pressurization	No Action
05S67	3/25/10	1	PSV lift due to over-pressurization	No Action
05T99	5/15/10	1	NOx 3-hr average limit, Excess	Issued NOV #A50406
06C00	10/24/11	3	PSV lift due to over-pressurization	No Action

4. Enforcement Agreements, Variances, or Abatement Orders

There were no enforcement agreements, variances, or abatement orders for DOW CHEMICAL COMPANY during the review period.

Conclusion

Following its review of all available facility and District compliance records from October 2005 through August 2012, the District's Compliance and Enforcement Division has determined that DOW CHEMICAL COMPANY was in intermittent compliance from the last Title V permit renewal through the present. DOW CHEMICAL COMPANY has demonstrated no evidence of ongoing non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule for this facility.

Based on this review and analysis of all the violations for the review period, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in the facility's current Title V permit.

H:\Enforcement\Title V Cert\Title_V_Compliance_Review_DOW_A0031_9_6_12.doc

APPENDIX B

GLOSSARY

AB2588
Assembly Bill 2588, Air Toxics "Hot Spots" Information and Assessment Act of 1987 – directs the California Air Resources Board and the Air Quality Management District to collect information from industry on emissions of potentially toxic air pollutants and to inform the public about such emissions and their impact on public health.

ACT
Federal Clean Air Act

alkene
A class of unsaturated aliphatic hydrocarbons having one or more double bonds.

amine
A class of organic compounds of nitrogen.

APCO
Air Pollution Control Officer

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

BARCT
Best Available Retrofit Control Technology

Basis
The underlying authority that allows the District to impose requirements.

C2
An Organic chemical compound with two carbon atoms

C5
An Organic chemical compound with five carbon atoms

C6
An Organic chemical compound with six carbon atoms

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEM
A "continuous emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NOx concentration) in an exhaust stream.

CEQA
California Environmental Quality Act

CFR
The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

Chlorinated heterocyclic
A closed ring compound in which one or more of the atoms in the ring is a chlorine atom.

Cl2
chlorine

CO
Carbon Monoxide

CO2
Carbon Dioxide

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

Dowanol®
A terminalized product, not produced at this facility.

Dowicil®
A preservative and antimicrobial produced at this facility.

Dowtherm
A heat transfer fluid.

dscf
Dry Standard Cubic Feet

E 6, E 9, E 12
Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals (4.53) x (10^6) = (4.53) x (10 x 10 x 10 x 10 x 10 x 10) = 4,530,000. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EFRT
An "external floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an EFRT, the floating roof is not enclosed by a second, fixed tank roof, and is thus described as an "external" roof.

ester
An organic compound corresponding in structure to a salt.

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

FR
Federal Register

FRT
Floating Roof Tank (See EFRT and IFRT)

GDF
Gasoline Dispensing Facility

GLM
Ground Level Monitor

grains
1/7000 of a pound

H2S
Hydrogen Sulfide

Halogenated heterocycle
A closed ring compound in which one or more of the atoms on the ring is a halogen atom.

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

HCl
Hydrogen chloride, hydrochloric acid.

HCl MACT
40 CFR Part 63, Subpart NNNNN

HF
Hydrogen fluoride, hydrofluoric acid.

Hg
Mercury

HHV
Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

IFRT
An "internal floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an IFRT, the floating roof is enclosed by a second, fixed tank roof, and thus is described as an "internal" roof.

LHV
Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

KCl
Potassium chloride

KF
Potassium fluoride

KOH
Potassium hydroxide

Latex MACT
40 CFR Part 63, Subpart U

Lontrel
A solid herbicide produced at this facility, an organic acid.

Lorsban
A terminalized product, not produced at this facility.

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MCA
Methyl chloroacetate

MEI
Methyl ester intermediate

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MOP
The District's Manual of Procedures.

MSDS
Material Safety Data Sheet

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

NESHAPS
National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NMP
N-methyl pyrrolidone

NOx
Oxides of nitrogen.

N-Serve®
An agricultural product produced at this facility.

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2
The chemical name for naturally-occurring oxygen gas.

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

PAI MACT
40 CFR Part 63, Subpart MMM

Perc
Perchloroethylene

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

Picoline
A methyl pyridine, an aromatic compound containing a nitrogen atom within the ring and an attached methyl group.

POC
Precursor Organic Compounds

PM
Particulate Matter

PM10
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PRD
Pressure Relief Device

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

RCRA
Resource Conservation and Recovery Act, 40 CFR Part 266, Subpart H.

RMP
Risk Management Plan

SB Latex/Rubber
Styrene-butadiene latex/rubber, produced at this facility.

SCR
A "selective catalytic reduction" unit is an abatement device that reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2
Sulfur dioxide

SO2F2
Sulfuryl fluoride

SO3
Sulfur trioxide

Sym-Tet
Symmetrical tetrachloropyridine, an aromatic compound containing a nitrogen atom within the ring and 4 attached chlorine atoms

TCA
Trichloroethane

TCE
Trichloroethylene

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Unit

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TRE
Total Resource Effectiveness

TRMP
Toxic Risk Management Plan

TSP
Total Suspended Particulate

TRS
"Total reduced sulfur" is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO2 by the combustion process.

TVP
True Vapor Pressure

Vikane®
Dow trade name for sulfuryl fluoride, a fumigant produced at this facility.

VOC
Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
C	=	degrees Celcius
cfm	=	cubic feet per minute
F	=	degrees Fahrenheit
f^3	=	cubic feet
g	=	gram
gal	=	gallon
gpm	=	gallons per minute
gr	=	grain
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inch
max	=	maximum
M	=	thousand
m^2	=	square meter
Mg	=	mega-gram, one thousand grams
μg	=	micro-gram, one millionth of a gram
min	=	minute
mm	=	millimeter
MM	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
mm Hg	=	millimeters of Mercury (pressure)
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

Symbols:

$<$	=	less than
$>$	=	greater than
$\leq$	=	less than or equal to
$\geq$	=	greater than or equal to

APPENDIX C

MAXIMUM EXPECTED EMISSIONS

P#31, Dow Chemical

Maximum Emissions for Title V Monitoring Determinations

S-40, Utilities water treatment tank, PM calculations:

Maximum Loading Rate, gpm	Volumetric flow into Tank, cfm	HCl concentr'n in displaced vapor, %	Water concentr'n in displaced vapor, %	Air concentr'n in displaced vapor, %	Volumetric flow out of tank, scfm	Molar flowrate out of tank, lbmol/hr	HCl vapor flowrate out of tank, lb/hr	HCl mole fraction exiting A-175	Inert Gas flow entering A-175, lbmol/hr	Water mole fraction exiting A-175,	Total vapor exiting A-175, lbmol/hr	HCl exiting A-175, lbmol/hr	HCl exiting A-175, lb/hr	Production rate, tons/hr	R6-311 Limit, lb PM10/hr
10	1.34	18.68%	0.58%	80.74%	1.3	0.21	1.4	1.9E-06	0.17	0.031	0.175	3.3E-07	**0.000012**	2.9	**8.4**

- calculations represent worst case emissions, based upon the maximum concentration of 36% HCl stored
- tank abated by A-175, packed absorber, packed with 3 feet of 1/4 inch ceramic intalox saddles
- maximum volumetric flow into a tank = volumetric flowrate of displaced vapor from the tank
- concentration of compound in displaced vapor = vapor pressure of compound/atmospheric pressure, taken at 77degF and 1atm
- mole fraction of HCl exiting tank from chemical engineering calculations based on the transfer units methodology
- molar flowrate of inerts entering A-178 = molar flowrate of inerts exiting A-175
- Total flowrate exiting A-175 = inert flow + HCl concentration*total flow + water concentration*total flow, therefore Total flow = inert flow/(1-HCl concentrn-water concentrn)

Percent of Limit	Dry gas flow exiting A-175, lbmol/hr	Dry gas flow exiting A-175, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
0.0001%	0.17	64.5	**0.001**	**0.15**	**0.7%**

S-44/S-446, N-Serve & Sym-Tet Plants, VOC calculations:

	Vent flowrate, lbs/hr	VOC inlet flowrate, lbs/hr	Abatement Efficiency, wt%	VOC outlet flowrate, lbs/hr	MW VOC, lb/mole	VOC outlet flowrate, moleVOC/hr	moles C/moles VOC	C outlet flowrate, molesC/hr	MW C, lb/mole	Outlet flowrate, lbs C/hr	Operating hours, hrs/day	Emissns lbs C/day	Total C Emissions lbs/day	R8-2-301 Limit, lbs/day	Percent of Limit
VOC calcs	300		99.9						12		24		**0.101**	**15**	**0.7%**
	carbon tet	21		0.021	153.8	0.00014	1	0.00014		0.0017		0.041			
	tetrachloroethylene	2		0.002	165.8	0.00001	2	0.00002		0.0002		0.005			
	hexachloroethane	5		0.005	236.7	0.00002	2	0.00004		0.0005		0.012			
	trichloropyridine	5		0.005	182.4	0.00003	5	0.00015		0.0018		0.043			

- calculations represent emissions for the case when primary abatement system (S-389) is down
- vents from S-44 & S-446 are combined and sent to the Process Recovery system followed by A-88 or A-89
- abatement efficiency determined through performance testing, and design of pressure swing adsorption unit, based on lengths of unsaturated adsorbent

S-44/S-446, N-Serve & Sym-Tet Plants, PM calculations:

	Vent flowrate, lbs/hr	VOC inlet flowrate, lbs/hr	A-88 HCl Abatement Efficiency, wt%	HCl flowrate from A-88, lbs/hr	Production rate, tons/hr	R6-311 Limit, lb PM10/hr	Percent of Limit	Inert flowrate from A-88, lbs/hr	MW Inerts (N2), lb/mole	Outlet flowrate, lbmol/hr	Dry gas flow exiting A-88, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
A-88	96.5		99.99											
	HCl	0.0156		**0.000002**	1.52	**5.4**	**0.00004%**	93	28	3.3	1252	**0.00001**	**0.15**	**0.007%**
	Cl2	0.0059												
	organics	0.033												
	water	3.48												
	inerts	93												

- calculations represent emissions for the case when primary abatement system (S-389) is down
- vents from S-44 & S-446 are combined and sent to the Process Recovery system followed by A-88
- abatement efficiency from chemical engineering calculations based on the transfer units methodology
- inert flowrate from A-88 is essentially total flowrate from A-88 due to the relative size of the other components

	Vent flowrate, lbs/hr	VOC inlet flowrate, lbs/hr	A-89 HCl Abatement Efficiency, wt%	HCl flowrate from A-89, lbs/hr	Production rate, tons/hr	R6-311 Limit, lb PM10/hr	Percent of Limit	Inert flowrate from A-89, lbs/hr	MW Inerts (N2), lb/mole	Outlet flowrate, lbmol/hr	Dry gas flow exiting A-89, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
A-89	96.5		95											
	HCl	0.0156		**0.00078**	1.52	**5.4**	**0.0144%**	93	28	3.3	1252	**0.004**	**0.15**	**2.7%**
	Cl2	0.0059												
	organics	0.033												
	water	3.48												
	inerts	93												

- calculations represent emissions for the case when primary abatement system (S-389) is down
- vents from S-44 & S-446 are combined and sent to the Process Recovery system followed by A-89
- abatement efficiency based on number of transfer units estimated at 3; this results in an efficiency consistent with vendor quotes
- inert flowrate from A-89 is essentially total flowrate from A-89 due to the relative size of the other components

S-135 - S-140, HCl Storage Tanks, PM Calculations:

Maximum Loading Rate, gpm	Volumetric flow into Tank, cfm	HCl concentr'n in displaced vapor, %	Water concentr'n in displaced vapor, %	Air concentr'n in displaced vapor, %	Volumetric flow out of tank, scfm	Molar flowrate out of tank, lbmol/hr	HCl vapor flowrate out of tank, lb/hr	HCl mole fraction exiting A-18	Inert Gas flow entering A-18, lbmol/hr	Water mole fraction exiting A-18,	Total vapor exiting A-18, lbmol/hr	HCl exiting A-18, lbmol/hr	HCl exiting A-18, lb/hr	Production rate, tons/hr	R6-311 Limit, lb PM10/hr
150	20.05	18.68%	0.58%	80.74%	19.4	3.07	20.9	8.816E-06	2.48	0.026	2.55	2.2E-05	**0.0008**	44	**51.7**

- calculations represent worst case emissions from each of the tanks, based upon the maximum concentration of 36% HCl stored
- all tanks abated by A-18, packed tower with 15 feet of packing, 1 inch plastic super intalox saddles
- maximum volumetric flow into a tank = volumetric flowrate of displaced vapor from the tank
- concentration of compound in displaced vapor = vapor pressure of compound/atmospheric pressure, taken at 77degF and 1atm
- mole fraction of HCl exiting tank calculated from equilibrium vapor pressure of HCl over 10% HCl scrubbing solution, 0.0067 mmHg
- molar flowrate of inerts entering A-18 = molar flowrate of inerts exiting A-18
- Total flowrate exiting A-18 = inert flow + HCl concentration*total flow + water concentration*total flow, therefore Total flow = inert flow/(1-HCl concentrn-water concentrn)

Percent of Limit	Dry gas flow exiting A-18, lbmol/hr	Dry gas flow exiting A-18, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
0.002%	2.48	941	**0.006**	**0.15**	**4.0%**

S-176 through S-179, Cooling Towers, PM Calculations:

Circulat'n Rate, gpm	Air Flow, acfm	AP42 PM10 EF, lb/1e3 gal	PM10, lb/hr	R6-311 Limit, lb PM10/hr	Percent of Limit	AP42 0.02% Drift, gal/min	Drift Rate, ft3/min	Volume Fraction Water in Exhaust	Air Flow, dscfm	Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
3300	90000	0.019	**3.8**	**40**	**9.5%**	0.66	0.0882	9.800E-07	89999.9	**0.0049**	**0.15**	**3.3%**

- calculations represent worst case emissions from each of the cooling towers; all are the same.

Thermal Oxidizers:

	Measured PM, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit	Total Feed Rate, lbs/hr	Feed Rate, tph	Measured PM, lb/hr	CO2 conc, %	PM corrected to 12% CO2, lb/hr	R6-311 Limit, PM10, lb/hr	Percent of Limit
S-336	**0.0102**	**0.15**	**6.8%**	2014	1.007	0.111	11.17	**0.103**	**4.12**	**2.5%**
S-389	**0.0115**	**0.15**	**7.7%**	1066	0.533	0.072	15.6	**0.094**	**2.69**	**3.5%**

- Particulate emissions measured during trial burns required by the RCRA permitting process.

Dowtherm Heaters:

	Maximum Firing Capacity, Btu/hr	Natural Gas Heating Value, Btu/scf	Maximum Firing Capacity, scf/hr	AP42 PM Emission Factor, lb/MMscf	Emissions, lb/hr	Emissions, gr/hr	Exhaust Flowrate, cfm	Outlet grain loading, gr/cf	R6-310 Emission Limit, gr/dscf	Percent of Limit
S-444	2.50E+07	1050	2.38E+04	7.6	0.18	1260.00	9239	**0.002**	**0.15**	**1.3%**
S-460	2.50E+07	1050	2.38E+04	7.6	0.18	1260.00	7770	**0.003**	**0.15**	**2.0%**

Vikane Plant:

	Thruput, tpy	Emission Factor, lbs SO2/ton	Abatement Efficiency, wt%	Operating, days/yr	Emission Rate, lb/min	MW SO2, lb/lbmol	Molar Volume, ft3/lbmol	Exhaust Flowrate, cfm	Outlet SO2 Concentn, ppm	R9-1-302 Limit, ppm	Percent of Limit
S-454	3360	0.31	0.99	350	2.1E-05	64.06	386.8	30	**4.23**	**300**	**1.4%**

- Emission factor determined by Dow using ASPEN process model simulation.

Lontrel Plant:

	Max Operating Rate, gal/hr	Density of Reactant, lb/gal	MW Reactant, lb/lb-mol	Max Operating Rate, lbmol/hr	Max HCl Production Rate, lbmol/hr	Total Molar flowrate into A-96, lbmol/hr	Inert flowrate into & out of lower A-96, lbmol/hr	Concntr'n H20 vapor exiting lower section of A-96, lbmol/lbmol	HCl Concntr'n exiting lower section of A-96, lbmol/lbmol	Total flowrate out of lower section of A-96, lbmol/hr	HCl flowrate out of lower section of A-96, lbmol/hr	HCl flowrate out of lower section of A-96, lb/hr	A-96 HCl Abatemt Efficiency in upper section, wt%	Max HCl Emiss'ns exiting A-96, lb/hr	R6-311 Limit, PM10, lb/hr	Percent of Limit
S-461/462	95	13.3	265.4	4.8	14.4	14.7	0.074	0.075	0.0035	0.0803	0.00028	0.01	99.75	**0.000025**	**3.01**	**0.001%**

- S-461 and S-462 are abated by A-96, a packed tower with two separate sections.
- Composition of stream entering A-96: 98% HCl, 0.5% inerts (air & nitrogen), remainder water.
- Concentration of water vapor exiting lower section of A-96 = equilibrium vp of water over the 20% HCl recirculating solution/vp of the gas stream (approx. atmospheric)
- Concentration of HCl exiting lower section of A-96 from chemical engineering calculations based on the transfer units methodology - packed height of 12 ft of 1 in Super Intalox saddles in the bottom section
- Total flow = inert flow + HCl flow + water flow; HCl flow = HCl concentrn* total flow and water flow = water concentrn*total flow
  therefore, Total flow = inert flow/(1 - HCl concentrn + water concentrn)
- Concentration of HCl exiting upper section of A-96 from chemical engineering calculations based on the transfer units methodology - packed height of 4 ft of 1 in Super Intalox saddles in the bottom section

	Inert flowrate into & out of lower A-96, lbmol/hr	Max HCl Emiss'ns exiting A-96, lb/hr	MW HCl, lb/lb-mol	Max HCl Emiss'ns exiting A-96, lbmol/hr	Total (dry) flowrate exiting A-96, lbmol/hr	Standard molar volume, scf/mol	Total flowrate exiting A-96, dscf/hr	HCl outlet grain loading from A-96, gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit
S-461/462	0.074	0.000025	36.5	6.8E-07	0.074	379.4	28.1	**0.0062**	**0.15**	**4.1%**

Lontrel Dryer:

	Maximum Thruput, gal/hr	Density of Material, lb/gal	Production Rate, lb/hr	AP42 Emission Factor, kg/MG	Unabated Emission Rate, lb/hr	A-95 Abatement Efficiency, wt%	Emissions exiting A-95, lb/hr	A-114 Abatement Efficiency, wt%	Abated Emissions, lb/hr	R6-311 Limit, PM10, lb/hr	Percent of Limit	Exhaust flowrate, acfm 47mmHg, 68 degF	Exhaust flowrate, dscfm	Uutlet grain loading, gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit
S-464	20	11.5	230	33	7.58	99.9	0.0076	90	**0.0008**	**0.96**	**0.1%**	349.7	21.5	**0.0043**	**0.15**	**2.9%**

- Emission factor determined by Dow using ASPEN process model simulation.

Verdict and Trifluoro Plants, VOC Calculations:

	Process Rate, gal/hr	Density, lb/gal	Process Rate, lb/hr	MW VOC, lb/mol	Process Rate, mol/hr	Mole HCl/ Mole VOC	HCl Exhaust Rate, mol/hr	VOC vp at Maximum Temperature atm	Mole fraction VOC, mol/mol	VOC Emissions mol/day	Moles C/mole VOC	Carbon Emissions lb/day	R8-2-301 Limit, lb/day	Percent of Limit
S-474	60.0	13.7	822	265	3.1	3.0	9.3	3.40E-05	3.40E-05	0.0076	6	**0.5472**	**15**	**3.6%**

	Maximum Process Rate, ft3/yr	Maximum Process Rate, lb-mol/yr	VOC vp at Maximum Temp, atm	Mole fraction VOC, mol/mol	VOC Emissions lb-mol/yr	Moles C/mole VOC	Carbon Emissions lb/yr	Annual Operation days/yr	Carbon Emissions lb/day	R8-2-301 Limit, lb/day	Percent of Limit

S-476	5.00E+06	13193	1.40E-05	1.40E-05	0.185	6	13.32	300	**0.0444**	**15**	**0.3%**

- VOC is a halogenated pyridine, C6NH2Cl5
- Emissions are the maximum VOC content in the exhaust vapor based upon the VOC vapor pressure at maximum operating temperature, 45 degC.
- Maximum operating temperature for S-474 is 45 degC. S-476 is operated at ambient temperature, assume maximum of 35 degC.
- Assumes liquid phase in equilibrium with vapor stream.
- Actual process rate of nitrogen gas at S-476 is between 2 and 4 MMscf/yr; 5 MMscf/yr is a conservative maximum.

Verdict and Trifluoro Plants, PM Calculations:

	Max Operating Rate, gal/hr	Density of Reactant, lb/gal	MW Reactant, lb/lb-mol	Max Operating Rate, lbmol/hr	Moles HCl produced/ mole Reactant	MW HCl, lb/lb-mol	Max HCl Production Rate, lb/hr	A-101 HCl Abatemt Efficiency wt%	HCl exiting A-101, lb/hr	HCl flow into A-102, lbmol/hr	Inert gas flow out of A-102, lbmol/hr	Mole fraction HCl exiting A-102	Water fraction exiting A-102	Total flow exiting A-102, lbmol/hr	HCl exiting A-102, lb/hr	Product'n rate, tons/hr
S-474	60	13.7	265.4	3.1	3	36.5	339	90	34	9.3	0.047	0.0021%	0.0313	0.0485	0.000037	0.41

- A-101 HCl abatement efficiency used in the calculation is the design efficiency from the manufacturer. Theoretical efficieny from ASPEN simulations is 99%.
- Inert flowrate into A-102 = Inert flowrate out of A=102, calculated based on feed composition of 99.5% HCl and 0.5% inerts.
- HCl fraction exiting A-102 from chemical engineering calculations based upon transfer units' method - packing of 1 in Plastic Super Intalox saddles
- Water fraction calculated from vapor pressure of feed water at 25 degC, 23.8 mmHg

R6-311 Limit, PM10, lb/hr	Percent of Limit	Dry gas flow exiting A-18, lbmol/hr	HCl flow exiting A-102, lbmol/hr	Total flow exiting A-102, lbmol/hr	Dry gas flow exiting A-102, lbmol/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
2.3	**0.002%**	0.047	0.000001	0.047	17.8	**0.015**	**0.15**	**10%**

	Max Operating Rate, gal/hr	Density of Reactant, lb/gal	MW Reactant, lb/lb-mol	Max Operating Rate, lbmol/hr	Moles HCl produced/ mole Reactant	MW HCl, lb/lb-mol	Max HCl Production Rate, lb/hr	Molar HCl flow into A-100, lbmol/hr	Total molar flow into A-100, lbmol/hr	Inert molar flowrate into A-100, lbmol/hr	Water fraction exiting A-100	HCl fraction exiting A-100	Total flow out of A-100, lbmol/hr	HCl out of A-100, lb/hr	R6-311 Limit, PM10, lb/hr	Percent of Limit
S-476	60	13.7	265.4	3.1	3	36.5	339.5	9.30	10.33	1.03	0.056	0.0000015	1.09	**0.00006**	**2.3**	**0.003%**

- Flowrate into A-100 is 90% HCl and 10% inerts (N2)
- Inert flowrate into A-100 = Inert flowrate out of A-100
- Water fraction exiting A-100 is calculated as equilibrium water vapor pressure 42.2mmHg, divided by total pressure (atmospheric)
- HCl fraction exiting A-100 from chemical engineering calculations based on the transfer units methodology for 1 inch Super Intalox saddles
- Total flow = inert flow + HCl flow + water flow; HCl flow = HCl concentrn* total flow and water flow = water concentrn*total flow
  therefore, Total flow = inert flow/(1 - HCl concentrn + water concentrn)

	HCl flow exiting A-100, lbmol/hr	Total flow exiting A-100, lbmol/hr	Total Dry gas flow exiting A-100, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
S-476	1.6E-06	1.03	390.8	**0.001**	**0.15**	**0.7%**

Chlorinolysis:

Maximum flowrate, scfm	Maximum flowrate, lb-mol/hr	VOC content of exhaust, ppmv	VOC Emissions, lbmol/hr	MW, lb/lbmol	VOC emissions, lb/hr	Permit condition limit, lb/hr	Percent of Limit

S-505	35	5.54	100	0.00055	154.0	**0.0847**	**1.5**	**5.6%**

S-644 and S-645, 36% HCl Storage Tanks

Maximum Loading Rate, gpm	Volumetric flow into Tank, cfm	HCl concentr'n in displaced vapor, %	Water concentr'n in displaced vapor, %	Air concentr'n in displaced vapor, %	Volumetric flow out of tank, scfm	Molar flowrate out of tank, lbmol/hr	HCl vapor flowrate out of tank, lb/hr	HCl mole fraction exiting A-179	Inert Gas flow entering A-179, lbmol/hr	Water mole fraction exiting A-179,	Total vapor exiting A-179, lbmol/hr	HCl exiting A-179, lbmol/hr	HCl exiting A-179, lb/hr	Production rate, tons/hr	R6-311 Limit, lb PM10/hr
60	8.0	18.68%	0.58%	80.74%	7.75	1.23	8.4	1.9E-05	0.99	0.025	1.02	1.9E-05	**0.0007**	17.7	**28**

- calculations represent worst case emissions from each of the tanks, based upon the maximum concentration of 36% HCl stored
- calculations represent emissions from the tanks when abated by A-179, venturi scrubber followed by packed bed absorber
- maximum volumetric flow into a tank = volumetric flowrate of displaced vapor from the tank
- concentration of compound in displaced vapor = vapor pressure of compound/atmospheric pressure, taken at 77degF and 1atm
- mole fraction of HCl exiting A-179 calculated from equilibrium vapor pressure of HCl over 12% HCl scrubbing solution, 0.0145 mmHg
- molar flowrate of inerts entering A-179 = molar flowrate of inerts exiting A-179
- Total flowrate exiting A-179 = inert flow + HCl concentration*total flow + water concentration*total flow, therefore Total flow = inert flow/(1-HCl concentrn-water concentrn)

Percent of Limit	Dry gas flow exiting A-179, lbmol/hr	Dry gas flow exiting A-179, dscf/hr	Outlet Grain Loading, gr/dscf	R6-310 Limit, gr/dscf	Percent of Limit
0.003%	0.99	376	**0.013**	**0.15**	**8.7%**

S-648, Hydrogen Chloride Absorber and S-649, HCl Storage Tank:

Max Operating Rate, tons/hr	Falling Film Absorber Efficiency wt%	Max HCl Rate, lb/hr	A-181 HCl Abatemt Efficiency wt%	A-182 HCl Abatemt Efficiency wt%	Max HCl Emissions lb/hr	R6-311 Limit, PM10, lb/hr	Percent of Limit	A-184 > P-264 Outlet Flowrate, ft3/min	Max HCl Emiss'ns gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit	S-336 >>> P-260 Outlet Flowrate, ft3/min	Max HCl Emiss'ns gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit
2.405	90.9	438.7	99.99	99.99	**0.000004**	**7.38**	**0.000001**	217.6	**0.000002**	**0.15**	**0.001%**	1100	**4.2E-07**	**0.15**	**2.8E-06**

- HCl abatement efficiency for A-181, A-182 from chemical engineering calculations based on the transfer units methodology, based on a packed height of 20 ft and packing of 1 in Super Intalox saddles.
- After exiting A-182, the stream is further abated at A-184 or S-336. S-336 train has further acid abatement not credited in these calculations - these are worst case emissions.

Backup Generators:

	PM Emission Rate, g/bhp-hr	Power, hp	PM Emission Rate, gr/hr	Maximum Heat Capacity, MMBtu/hr	Max Outlet Grain Loading, gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit
S-706*	0.099	535	817	3.3810	**0.014**	**0.15**	**9.3%**
S-707	0.998	328	5052	2.76	**0.019**	**0.15**	**12.7%**
S-708	0.998	328	5052	2.76	**0.019**	**0.15**	**12.7%**

Maximum Capacity, Btu/hr	Natural Gas Heating Value, Btu/scf	Firing Capacity, scf/hr	AP42 PM Emission Factor, lb/MMscf	Emissions, lb/hr	Emissions, gr/hr	Exhaust Flowrate, scfm	Emissions, gr/scf	R6-310 Emission Limit, gr/dscf	Percent of Limit

S-709	455,400	1050	4.34E+02	7.6	0.003	21.00	426	**0.001**	**0.15**	**0.7%**

	PM Emission Rate, g/bhp-hr	Power, hp	PM Emission Rate, gr/hr	Maximum Heat Capacity, MMBtu/hr	Maximum Outlet Grain Loading, gr/dscf	R6-310 Emission Limit, gr/dscf	Percent of Limit
S-710	0.998	52	801	0.4278	**0.135**	**0.15**	**90.0%**
S-711	0.998	86	1325	0.5382	**0.140**	**0.15**	**93.3%**

*S-706 is equipped with a particulate filter, which is not required by District regulations.
The PM emission factor represents uncontrolled operation. Actual emissions are 0.04 g/bhp-hr.

Sulfuryl Fluoride Plant:

	Operation, hrs/yr	Vent, lb SO2/hr	Unabated emissions lb/yr	A-201 abatemt, wt%	B-105 abatemt wt%	Abated SO2 emissions, lb/yr	Abated SO2 emissions, lb/min	MW SO2, lb/lbmol	Molar Volume, ft3/lbmol	Exhaust Flowrate, cfm	Outlet SO2 Concentn, ppm	R9-1-302 Limit, ppm	Percent of Limit
S-712	7884	8.2	64648.8	95.0	99.9	3.2	6.8E-06	64.1	386.8	35.7	**1.15**	**300**	**0.38%**

- Contents of vent stream determined by Dow using ASPEN process model simulation, based on 100% conversion of chlorine due to excess HF and SO2 feeds.
- Control efficiencies based upon engineering calculations and vendor certifications.

APPENDIX D

ENGINEERING EVALUATIONS

Engineering Evaluation Report

Dow Chemical Company, P#31
901 Loveridge Road, Pittsburg
Application #14456

Background

Dow Chemical has applied to modify the existing Methyl Ester Intermediate (MEI) Plant to increase the production capacity, as well as to modernize the equipment. The MEI Plant, also known as Plant 640, produces an organic intermediate. This intermediate is further processed in Europe to produce Fluroxypyr, which is a broad-leaf weed herbicide registered under the name Starane®. Starane® is used to protect crops like wheat, barley, rye, corn, sugar cane, citrus, and onions, and is also used extensively in forestry management.

Plant 640 was permitted as a batch operation under Application 4128, submitted to the District in 1989. The application was revised in March, 1990 and the Authority to Construct was issued in November, 1990. The plant started up operation in mid-1992 and currently produces approximately of MEI per year. The MEI Plant consists of reactors, storage tanks, distillation columns, centrifuges, pumps, and associated piping. Dow elected to have the plant permitted as 4 sources, S-593, S-594, S-595, and S-596, (Plant 640, Sections 1 through 4) with each of the process units attributed to a source based on the manner in which the emissions are abated. The MEI operations are abated at one or more of the scrubbers A-146, A-147, A-148, and A-149 prior to venting to the atmosphere through stack P-242 or P-243. The plant produces MEI through a series of halogen exchange reactions and separation/purification steps. The reactants to the process include a fully halogenated heterocycle, potassium fluoride, aqueous ammonia, potassium hydroxide, and methyl chloroacetate with n-methyl pyrrolidone . Emissions resulting from this operation include water, nitrogen, ammonia, methyl chloride, methyl chloroacetate, n-methyl pyrrolidone, methanol, and other organic toxic air contaminants.

The proposed modifications to Plant 640 are planned to occur in 2 phases. Construction of the first phase is targeted to begin in early 2007, expected to be completed by the end of 2007, and will increase the MEI production capacity to approximately per year. The increase in capacity will be achieved by reducing batch times. The second phase of construction is expected to commence in early 2008 and would immediately follow or overlap the first phase, ultimately bringing the MEI production rates to approximately per year. These modifications will convert certain unit operations in S-594 and S-596 of Plant 640 from batch mode to continuous operation. None of the proposed modifications in Phase I or Phase II of the project will alter the basic chemistry of the existing process or the type of emissions generated.

To offset the increase in emissions caused by the proposed increase in production capacity, Dow has also proposed to abate the scrubbed emissions at one of the halogen acid furnaces (HAF), S-366 and S-389. This is a significant control improvement since the HAF units, subject to the federal Boiler and Industrial Furnace requirements, are tightly regulated and required to meet a very high destruction efficiency of 99.99% by weight, minimum. If both of the HAF units are unavailable for vent control, the emissions from the MEI Plant will be vented to a new backup activated carbon system. The net effect of the proposed project will therefore be an overall reduction in emissions.

The proposed modifications will affect exempt sources at the facility and the following permitted sources:

- **S-593, Plant 640, Section 1, abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series**
- **S-594, Plant 640, Section 2, abated by A-147, Packed Bed Water Scrubber B-3210**
- **S-595, Plant 640, Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; to also be abated by A-147 under this project**

S-596, Plant 640, Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series
S-604, Truck Loading Facility, abated by A-147, Packed Bed Scrubber B-3210
S-607, Storage Tank T-1904, abated by A-147, Packed Bed Scrubber B-3210

The following exempt sources will also be affected by the proposed project. The project will not change their exempt status. They have been listed only for informational purposes:
S-188, T-641 Storage Tank, exempt
S-192, T-646A Material Handling, exempt
S-193, T-646B Material Handling, exempt
S-606, Storage Tank T-602 Plant 640, exempt

The proposed modifications include routing the MEI Plant emissions to one of the existing halogen acid furnaces, if available, prior to release to the atmosphere. If neither of the halogen acid furnaces is available for abatement, the MEI Plant emissions will be abated at a new backup Carbon Adsorber prior to venting to the atmosphere:
S-336, Manufacturing Services HAF
S-389, Sym-Tet HAF
A-205, Backup Carbon Adsorber ME-3220

Process Description

The reactants to the MEI production process include a fully halogenated heterocycle (FHC), potassium fluoride (KF), aqueous ammonia (NH3), aqueous potassium hydroxide (KOH), and methyl chloroacetate (MCA). is used as a in the reaction. The reaction involves a series of halogen exchange reactions to replace chlorine atoms on the FHC with fluorine atoms, and in the final process step to add an amine molecule through a reaction with ammonia. The reaction produces a methyl ester intermediate (MEI), as well as a byproduct , a pyridine tar waste, and a wastewater stream contaminated with organic material (mostly methanol), all shipped offsite. Emissions include water, nitrogen, ammonia, methyl chloride, MCA, NMP, methanol, and other organic toxic air contaminants. Nitrogen is pulled into vessels at the MEI Plant during the emptying of a batch to minimize vacuum and is emitted during when the vessels are filled for the next batch.

S-593, Plant 640 Section 1 abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				
Columns				*(i)* *
Centrifuges			Y - §2-1-103.3	Replacing Replacing
Tanks				* *

Unit Type	Process Unit ID	Description	Exempt?	Status
				Replacing
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	Replacing
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	New
			Y - §2-1-123.3.2	New
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	New
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	

*Units temporarily out of service; may be put back into service in the future.

Section 1 operations are categorized together as they all vent to A-146, a Packed Bed NMP Scrubber, and are then vented to A-147, a Packed Bed Water Scrubber, prior to release to the atmosphere. The operations in this section are (1) , (2) and (3) Product Recovery.

1.

2. KCl Reforming, step 3

KCl Reforming consists of 3 main **unit** operations or steps, the last of which is carried out in Section 1 of Plant 640, S-593. In the last step of KCl reforming (step 3), a mixture of KCl, KF, and NMP from Section 2 (S-594) is centrifuged in F-300. The proposed modifications to the include replacement of F-300 with a larger centrifuge (S-593).

is a new exempt tank proposed for installation under this project, which will act as a

will be stored in a new exempt tank

Replacing the existing exempt tank, , with a larger exempt tank is proposed under this project.

where it is loaded into rail cars at S-5 for offsite delivery. The aqueous can also be loaded directly from to the terminal loading station, but is not normally loaded in this manner.

Installation of a new exempt storage tank,

3.

Dow has proposed replacement of with a under this project.

Installation of a new exempt tank, is proposed.

and transferred offsite for delivery to Europe for the final processing step and formulation.

Emissions from this section, S-593, consist of organic compounds and are abated in series by A-146 (B-3000), followed by A-147 (B-3210). A-146 is a counter-current packed bed column in which process vapors are contacted with NMP scrubbing fluid. Organics are transferred from the vent stream into the NMP. Periodically, the NMP is recycled back into the NMP Recovery process. The gases leaving A-146 are vented to A-147 for further treatment. Both abatement devices will remain unchanged from the existing configuration.

S-594, Plant 640 Section 2, abated by A-147, Packed Bed Water Scrubber B-3210

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				
Columns				New Modified
Tanks				New

Unit Type	Process Unit ID	Description	Exempt?	Status
				New New New Service, prev S-596

S-606, Storage Tank T-602 Plant 640 (exempt)

Section 2 operations are grouped together since they all vent directly to A-147, a Packed Bed Water Scrubber B-3210, and will continue to vent to A-147 after modification. Section 2 operations consist primarily of (1) (2) and (3)

1.
is processed to separate for recycle, water for recycle, and

The processing includes the steps of

2.

and the low vapor pressure pyridine tar waste is stored at exempt tank and loaded at exempt to be shipped offsite for disposal.

Under the new operational mode, the existing so the will simply change service from

The separated water will be recycled within the plant, and the recovered

3.

Water is removed from this process and recycled.
The existing
system will be converted under this project from batch mode to continuous operation to allow increased operating rates with the same equipment. This conversion will include replacement of the

S-595, Plant 640 Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; to also be abated by A-147 as part of the proposed MEI plant modifications

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				New
Columns				New
Tanks				New New

All of the operations in Section 3 of Plant 640 vent to the ammonia scrubber A-149 (B-1303). This abatement equipment will not be affected by the proposed modifications to Plant 640. The operations in Section 3 consist of

and some of the water is then distilled out.
This will
reduce the time in , allowing more batches to be completed each day.

The emissions from this section consist of volatile organic compounds, like the other sections of Plant 640, but also include ammonia. The R-1250 system will be abated by A-149 Since there is no ammonia in R-1250 at this point, there is no need for continued abatement at A-149. However there is so the vessel will be abated by A-147 during the portion of a batch.

S-596, Plant 640 Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				Modified
Columns				Renumbered previously
Tanks				Renumbered previously Changed Service to S-594

S-604, Truck Loading Facility Plant 640, abated by A-157, Vapor Balance System
S-607, Storage Tank T-1904 Plant 640, abated by A-147, Packed Bed Scrubber B-3210

All of the operations in Section 4 of Plant 640 vent to the water scrubber A-148 (B-3200/3201). The vent gases from A-148 are for a second stage of scrubbing at A-147. This abatement train will remain unchanged under the proposed Plant 640 modifications. The operations at Section 4 of Plant 640 consist of the and the the mixture is transferred to for storage. removes volatile organic compound (VOC) and toxic air contaminants (TAC), such as This condensed process wastewater is collected in and pumped to S-607. The emissions from S-607 are abated by one of the MEI scrubbers, so the emissions from this source are included in the overall emission limit that applies to the combined emissions from the MEI Plant, even though the source is permitted separately. From S-607, the wastewater is loaded into trucks at S-604 and shipped offsite.

The R-280 system will be converted from batch to continuous operation to allow increased processing rates with the same equipment. This will result in a large reduction in vent flows from this unit operation to abatement and will result in reduction of emissions. Other changes include changing the identification number of T-1711 and other equipment currently used with R-280 to T-290; using a currently out-of-service distillation column B-1701 and associated equipment with R-280; renaming B-1701 as B-280; and

changing T-4400 from , as discussed in the operations of Plant 640, Section 2 above.

S-336, Manufacturing Services HAF
S-389, Sym-Tet HAF
A-205, ME-3220 Carbon Adsorber
Currently, Plant 640 vents to the atmosphere from two emission points – P-242, which follows A-147 and P-243, following A-149. As part of Phase I of the project, Dow has proposed to combine these vent streams and direct the already abated emissions to an additional control device prior to release to the atmosphere. To do so, Dow will install a new vent gas accumulator vessel to collect the compressed vent gases from A-147 and A-149. The new accumulation system provides surge capacity and will even out vent flow peaks arising from the numerous batch processing steps in Plant 640, providing a consistent, steady flow to the downstream abatement devices. The system will include a surge vessel, a compressor with cooler to compress the vent gas (reducing the storage volume), a knockout pot to remove condensed water, and controlled venting instrumentation to provide steady outflow. Dow has indicated that this will result in a large reduction in vent flows from this unit operation to abatement and is therefore a reduction in air emissions. However, no credit is being requested for this reduction at this time. The emissions from T-3220 will either be abated at one of the halogen acid furnaces, S-336 or S-389, or if both were unavailable, then the emissions would be abated at the new backup carbon adsorption system A-205 (ME-3220).

Emission Calculations

There are 4 types of emissions associated with this project:

- Transport emissions, which include diesel combustion emissions from deliveries to the site and shipment from the site by truck and rail.
- Unloading/loading emissions from the unloading of materials delivered to the site and materials loaded at the site for transport offsite.
- Organic fugitive emissions from components such as valves, pump seals, and flanges.
- Emissions from the final atmospheric vents from the MEI Plant.

<u>Transport and Loading/Unloading Emissions</u>
S-602, Tank Truck Loading Facility Plant 640 (exempt)
S-604, Truck Loading Facility Plant 640, abated by A-157, Vapor Balance System
S-607, Storage Tank T-1904 Plant 640, abated by A-147, Packed Bed Scrubber B-3210
As defined in Section 2-1-213, the transport emissions, except for motor vehicle (truck) emissions, are attributed to the loading and unloading racks:

> *" … In addition, facilities that include cargo loading or unloading from cargo carriers other than motor vehicles shall include the cargo carriers as part of the source which receives or loads the cargo. Accordingly, all emissions from such carriers while operating in the District, or within California Coastal Waters adjacent to the District, shall be included as part of the source emissions."*

As there will be an increase in the delivery of reactants and offsite transport of the product and other materials, the non-motor vehicle transport emission increases must be reviewed to determine whether any of the transport and loading emission increases should be attributed to the loading or unloading sources.

and are delivered to the site by truck and unloaded at S-602 into at S-595 and at S-596, respectively. These tanks are vapor balanced back to the MEI process and vent gases are treated at the MEI abatement systems. The truck transport emissions are not included in the emission inventory per Section 2-1-213 above, therefore no emission increase is charged to the proposed project for transport of these reactants.

The is delivered to the MEI Plant by pipeline from another production process onsite. The material is stored at the originating plant until needed at the MEI process, so storage capacity for this material will not change. In addition, production of this material will not change even though MEI production capacity will increase. The material that is not currently utilized for MEI production is shipped offsite for further processing. The proposed MEI modifications will allow more of the heterocycle to be processed onsite. The proposed modifications therefore do not cause any change to the process that produces the onsite (and no additional shipments of reactants to that process) and result in a reduction of offsite shipments. Therefore, there is no increase in transport emissions associated with increased onsite use of the .

The reactants are delivered to the facility via railcar, with occasional truck receipts in the event of rail interruptions. The materials are unloaded from railcars (or trucks) at S-603. is delivered by pipeline to the exempt storage tank, at S-593 for use in the MEI process. The is delivered to the exempt storage tank, for use in the MEI process. is transferred to exempt storage tank at S-593 for use in the MEI process. All tanks are vapor balanced back to the MEI process and vent gases are treated at the MEI abatement systems. All of these compounds are exempt materials per Sections 2-1-123.2 (contain less than 1% VOC by weight) or 2-1-123.3.2 (high boiling point compound), therefore the unloading, handling, and storage of these materials do not require District permits. Emissions from exempt operations are not included in the plant emission inventory. Therefore, there is no increase in emissions charged to the proposed project for the transport of these exempt materials.

Regarding emissions caused by loading and transport of the product, byproduct, and waste materials for offsite shipment, the pyridine tar waste and byproduct are exempt materials per Section 2-1-123.2 (contain less than 1% VOC by weight). The exempt tar waste and process wastewater are loaded into trucks at S-602 and S-604, respectively. The exempt byproduct is loaded into railcars at S-5. The product MEI is a non-volatile solid and and does not result in emissions, therefore the loading of this material is also not subject to District permit requirements. As discussed above, the emissions associated with exempt operations are not included in the plant emission inventory. The emission increases from the transport of process wastewater by trucks (motor vehicles) is excluded from the emission inventory per Section 2-1-213. The process wastewater is not an exempt material, however the emissions from storage of this material are vented to the MEI Plant abatement system and emitted through the MEI process vents, and are therefore included in the current emission limit for the plant. The loading operation is vapor balanced back to the storage tank, so these emissions are also abated by the MEI Plant abatement system and included in the MEI vents. The existing emission limit that applies to the MEI vents has been fully offset and is not being increased under this project, so there is no emission increase to be assessed for storage of additional process wastewater. Fugitive leaks from the loading operation have been deemed negligible since Kamvalok quick connect couplings are used in conjuction with the vapor balance system.

Dow has also indicated that the proposed project will not require any increases in storage capacity for reactants, raw materials, or byproducts. Additional shipments of materials will be required, however no additional train deliveries will be made. The additional material delivered or removed from the site by rail will occur through use of additional railcars to the existing shipments. As all truck transport emissions are excluded from the emission inventory and any increases in railcar shipments occur due to materials exempt from District permit requirements, no emission increases from transport or loading have been assessed for the proposed MEI project.

MEI Plant Fugitive Leaks

Fugitive emissions occur due to leaks at components such as valves, connectors, pumps, compressors, pressure relief devices, sampling ports, etc. The fugitive emission rate calculated for the existing MEI Plant under Application #4128 was 20.2 pounds of POC/day and 0.35 pounds of ammonia/day, based on the SOCMI “non-leaker” emission factors. The non-leaker factors are appropriate for use and are

conservative emission estimates due to the virtual absence of leaks detected in their ongoing fugitive emission monitoring program and due to the fact that the facility employs fugitive emission controls such as magnetic drive sealess pumps and/or double mechanical seal pumps, rupture disks or O-rings on pressure relief valves.

The increase in fugitive leak emissions from this modification have been calculated based on the measured average fugitive leak rate data from the existing monitoring program for the MEI Plant and the estimated increase in the number of components in organic service . The estimated number of components has been provided by Dow from the planned piping and instrument diagrams, and increased by 20% for a worst-case estimate. The increase in fugitive emissions associated with the proposed project is 37 lbs of POC/year. A final component count will be provided after construction to confirm the fugitive emissions will not exceed 3.7 tons per year (the sum of the fugitive emissions charged to the existing plant components and the fugitive emissions from the proposed modifications).

MEI Plant Process Vents – Emissions to the Atmosphere

Currently, the MEI Plant vents to the atmosphere through two emission points – stack P-242, which follows A-147 and stack P-243, which follows A-149. The emissions from this process were originally assessed based on a maximum processing rate of , using process modeling software, mass balance, and operating experience from a similar production plant located overseas. After startup, actual emissions were measured during source testing performed in 1994 and demonstrated compliance with the existing process vent emission limit of 8 lbs/day as well as the additional ammonia and pyridine limits. The emission factors used to assess emissions from this proposed project were developed from the 1994 source test data. Since the proposed project will not change the basic chemical processes that occur in the process, the source test data is still appropriate for evaluation of post-project emissions. The project modifications will only reduce batch times (Phase I) and eventually convert the certain unit operations to continuous mode (Phase II). As the basic reactions in the process will not change, the types of emissions and proportions of emission rates will remain the same. The modification may actually reduce emissions due to the lower vent flows from process vessels associated with a continuous process (steady state).

The vent emissions from A-147 were measured at P-242 during operation of the MEI Plant on 4 different days in February 1994. The source test for A-147/P-242 included sampling for specific organic compounds and identified several unexpected compounds which were determined to be present as impurities in the raw materials used in MEI production. The emissions from A-147/P-242 were found to include methyl chloride and similar compounds, 4-amino-3,5-dichloro-2,6 difluoropyridine, and ammonia, as expected, as well as unexpected chloroform, trichloroethylene and similar compounds, and 1,1,1,2-tetrachloroethane (TCE). The highest emissions from these test dates have been converted to a mass emission factor per pound of product produced, except for the compounds which are produced and emitted due to the contamination of , one of the reactants. For those contaminant-based compounds, the emission factor has been calculated as pounds per pound of contaminant, , and reduced to 40% of the values measured during the source test to account for the reduced contaminant levels. At the time of the 1994 testing, the specification for allowed up to 0.5% by weight. To reduce emissions created from this contaminant, Dow has tightened the specifications to allow no more than 0.2% by weight. Therefore, the emissions caused by contamination have been reduced to 0.002/0.005 = 40% of the emissions measured in 1994.

The vent emissions from A-149 were measured at P-243 on 3 different days in February and March 1994 and detected emissions of methyl chloride and similar compounds, 4-amino-3,5-dichloro-2,6 difluoropyridine, and ammonia, as well as tetrachloroethylene and similar compounds, and carbon tetrachloride. The emissions measured during source testing for the A-149 vent stream have been converted to a mass emission factor per batch, as these emissions occur from S-595 during the batch reaction at this source.

Post-project Emissions Exiting A-147

Compound	EF (lbs/lbs MEI)	EF (lbs/lbs TCE)	MEI (lbs/day)	TCE (lbs/day)	Emissions (lbs/day)
Total POC					11.444
Ammonia					0.0056

Post-project Emissions Exiting A-149

Compound	EF (lbs/batch)	Production (batches/day)	Emissions (lbs/day)
Total POC			1.859
Ammonia			0.00025

Post-project Emissions in Combined Vent from A-147 & A-149

Compound	A-147 (lbs/day)	A-149 (lbs/day)	Combined Emissions (lbs/day)
Total POC	11.444	1.859	13.303
Ammonia	0.0056	0.00025	0.00585

Dow has proposed to collect, compress, and store the vent gases from the existing A-147 and A-149 at a new surge vessel, T-3220. The gases from the surge vessel will be abated at the average rate of influent vent gas flowrate. The primary abatement will be at one of the thermal oxidizers/halogen acid furnaces, S-336 or S-389. If both are unavailable, then abatement will occur at the new backup carbon adsorption system A-205 (ME-3220).

The HAF units are subject to the Resource Conservation and Recovery Act (RCRA) Boiler and Industrial Furnace (BIF) Rule, 40 CFR Part 266, Subpart H, administered by the Department of Toxic Substance Control. Under this regulation, the HAF units are required to meet a very high destruction efficiency of 99.99% by weight, minimum, for halogenated organic compounds. Certifications of compliance with this standard are required every 3 years, and the minimum destruction efficiency is confirmed through BIF trial burns.

The proposed increase in MEI production capacity will result in increased vent gas volumes, but the proposed abatement at either the thermal oxidizers or carbon adsorber will reduce the emissions. The

HAF units will further reduce the MEI vent POC emissions by 99.99% over the current abatement achieved at the MEI scrubbers. The backup carbon adsorber is expected to achieve a 99% reduction with fresh carbon and a minimum of 90% by weight, just before the carbon is changed out. Use of the backup carbon adsorber is expected to occur no more than 1,440 hours (60 days) per year, during the annual maintenance shutdowns of the HAF units and when liquids are being combusted at S-336. Worst-case POC emissions have based on a minimum 90% abatement efficiency for 60 days per year and the minimum 99.99% abatement efficiency for the remainder of the year:

Abated Post-project POC Emissions from MEI Plant
13.303 lbs/day[(1-90/100)(60 days/yr) + (1-99.99/100)(305 days/yr)] = 80.2 lbs/yr

The emissions from the MEI Plant after the proposed expansion and modifications have been summarized below. The fugitive emissions are unabated. The vent emissions have been credited with the lowest proposed abatement efficiency 90% for the A-205 carbon adsorption unit, which will only occur just before carbon changeout, for a maximum of 60 days/year. Actual expected emissions from the plant when abated at A-205 are expected to be much lower as the carbon efficiency will range between 99% and 90%. For the remainder of the year, an abatement efficiency of 99.99% has been used in the calculation of abated vent emissions.

Post-project Abated Emissions from the MEI Plant

Pollutant	Annual Emissions, lb/yr	Annual Emissions, tpy	Average Daily Emissions, lb/day
Fugitive emissions, POC	7410	3.705	20.3
Process Vent emissions, POC	80.2	0.0401	0.22
Total POC	7490.2	3.745	20.52

The MEI Plant process vents are currently permitted to emit 8 lbs POC/day (for 365 days/year), and the combined process vent and fugitive emissions of 5.146 tons of POC/year were fully offset when the MEI Plant was initially permitted. Therefore, the post-project emissions summarized above do not constitute any increase in criteria pollutant emissions from the MEI Plant.

Cumulative Increase

The cumulative increases for all facilities in the District were reset in 1991. All of the POC emissions at Dow have been fully offset either by contemporaneous reductions or through use of banked emission credits. Therefore, Dow's current cumulative increase for POC emissions is zero. The net affect of the proposed MEI project will be a reduction in emissions, therefore there is no increase to add to the cumulative increase for this facility.

Pollutant	Current, tpy	Project, tpy	New, tpy
POC	0	0	0

Compliance Determination

District Regulation 1, "General Provisions and Definitions"

District Regulation 1, Section 301 prohibits all sources from causing public nuisance. This source is not expected to be a source of public nuisance for either odor or emissions as the finished product is in a solid, non-volatile form. In addition, the physical construction of the plant modifications will not required groundbreaking and is not expected to cause public nuisance due to this fact and the distance between the facility and the nearest residences.

Public Notice Requirements, Regulation 2, Rule 1

The Waters Bill Public Notification requirements, contained in District Regulation 2, Rule 1, Section 412, are triggered for new or modified sources that will cause an increase in toxic air contaminant emissions within 1,000 feet of a K-12 school. Per the Data Form P-101B completed and certified by the applicant, this facility is not located within 1,000 feet of a school. The District's database confirms that there is no school within 1 mile of the facility, therefore Waters Bill Public Notification requirements are not triggered.

California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1

As specified in District Regulation 2, Rule 1, Section 310, applications for all new and modified sources are subject to the requirements of the California Environmental Quality Act (CEQA), unless the project is ministerial or exempt, as defined in Sections 2-1-311 and 2-1-312, respectively. The District's Permit Handbook defines the specific procedures, fixed standards, and objective measurements used in the evaluation of approval or denial of ministerial projects. The MEI Plant is a unique process and not covered by one of the source categories in the District's Permit Handbook, therefore this project is not ministerial. In addition, the proposed MEI Plant modifications do not meet the definitions of exempt projects in Section 2-1-312, since the project includes both physical modification of equipment and will increase the production capacity of the plant.

This project is therefore subject to review under CEQA. The City of Pittsburg acted as Lead Agency for this review and published an Initial Study on February 28, 2007 with a Notice of Intent to adopt a Negative Declaration for the project. The Negative Declaration indicates that the project will have no significant effect on the environment, as defined by CEQA. This decision considered possible impacts to aesthetics, agricultural, biological, cultural, and mineral resources, geology/soils/seismicity, hazardous materials, water quality, land use, noise, population and public servies, transportation and traffic, utilities, and air quality. The findings included no impacts or less than significant impacts in all areas considered.

The City of Pittsburg received one comment letter on the published Initial Study, and the Pittsburg Planning Commission held a public meeting on March 27, 2007 to consider the draft Negative Declaration in connection with its Design Review of the project. The Negative Declaration was reviewed by the Pittsburg Planning Commission on March 27, 2007 and unanimously adopted. The resolution adopting the Negative Declaration was certified and deemed effective on March 27, 2007, indicating that the project will have no significant effect on the environment and satisfying the CEQA requirements.

Best Available Control Technology (BACT), Emission Offsets, and Prevention of Significant Deterioration (PSD) Requirements, Regulation 2, Rule 2

Per Regulation 2, Rule 2, Section 301, BACT requirements are triggered if maximum emissions from a new or modified source are 10 pounds per highest day or more. Section 2-2-206 specifically excludes cargo carriers are from BACT requirements, therefore the rail and truck transport emissions are not subject to BACT. Only the MEI Plant itself is potentially subject to BACT requirements. However, the overall daily and annual emissions from this plant will be reduced as a result of the proposed changes, and the plant has elected to maintain the existing emissions limits at this time. As there is no increase in emissions of regulated air pollutants due to the proposed project and no change to the permitted and offset emissions from the MEI Plant, BACT is not triggered.

The offset requirements for precursor organic compounds and nitrogen oxides are found in Regulation 2, Rule 2, Section 302. POC and NOx emission offsets are required for emissions from new or modified sources at a facility which emits or will be permitted to emit 10 tons per year or more. All of the POC emissions at Dow have been fully offset. The proposed MEI project will result in a net decrease in actual POC emissions from the affected sources and no change in the permitted emissions from the MEI

process, therefore there are no additional POC emissions to be offset. POC offsets are therefore not required. No increase in NOx emissions have been charged to this project as the only NOx emissions would result from transport by motor vehicle or rail transport of exempt materials. The emissions from motor vehicles are excluded from District regulation by Regulation 1-110 and emissions resulting from handling of exempt materials are exempt from permitting requirements, including offset requirements. Therefore, NOx emission offsets are not required.

The PM10 and SO2 offset requirements are specified in Section 2-2-303, however there are no increases in PM10 or SO2 emissions due to this project, except due to transport. As discussed above, the transport emissions are excluded from consideration in this project. Therefore, the PM10 and SO2 offset requirements do not apply.

Prevention of Significant Deterioration (PSD) requirements are defined in Sections 2-2-304 and apply to new major facilities and major modifications at a major facility. There is no increase in emissions associated with this project, therefore it is not a major modification and PSD does not apply.

Health Risk Assessment Requirements, Regulation 2, Rule 5

The District's regulation concerning toxic air contaminant emissions is codified in Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. All toxic air contaminant (TAC) emissions from new and modified sources are subject to risk assessment review, if emissions of any individual TAC exceed either the acute or chronic emission thresholds defined in Table 2-5-1.

There are 2 sources of emissions due to this project – emissions from the MEI Plant, including both the fugitive emissions from leaks in piping components and the final emission points, and the transport emissions from the trucks and railcars delivering products to and removing products from the facility. The truck transport emissions are specifically excluded from District regulation under Section 1-110.1, Exclusions:

> **"District Regulations shall not apply to the following: Engines used to propel motor vehicles, as defined in the Vehicle Code of the State of California."**

and are therefore not subject to Regulation 2, Rule 5. Increases in emissions due to transport of reactants or products by railcar have not been charged to the loading/unloading operation at the site, as the materials being transported by railcar are exempt from District permit requirements (see the discussion in the Emission Calculations section above).

The actual TAC emissions from the MEI Plant (including ammonia, chloroform, trichloroethylene, tetrachloroethane, carbon tetrachloride) will be reduced by the proposed project to the levels indicated in the table below, which are less than the levels currently emitted and allowed by the existing permit. The abated emissions have been calculated based on 90% reduction of organics at the carbon unit for 60 days per year and 99.99% reduction of organic emissions at the HAF units for the remainder of the year. The ammonia emissions have been reduced by 99.99% for the period vented to the HAF units only; the carbon unit achieves no reduction of ammonia.

Post-project Reduced Emissions of Existing TACs

Compound	Combined Emissions from A-147/A-149 (lbs/day)	Abated HAF Emissions (lbs/hour)	Abated C Ads Emissions (lbs/hour)	Fugitive Leak Emissions (lbs/hr)	Abated Emissions (lbs/yr)
Chloroform	0.352	1.47E-6	0.00147	--	2.1
Trichloroethylene	3.696	0.00002	0.0154	--	22.3
TCE	0.343	1.43E-6	0.00143	--	2.1

Carbon tetrachloride	1.652	0.00001	0.00688	--	10
Ammonia	0.00585	2.44E-8	0.000244	0.00006	0.35

The secondary pollutant, hydrogen chloride, which is also a TAC, is formed due to combustion of chlorinated compounds at the HAF units. The hydrogen chloride (HCl) formed in this combustion is mostly recovered in the absorber and caustic scrubbing systems following the HAF units, S-336 and S-389, which have been demonstrated to achieve 99.98% and 99.99% recovery, respectively. The abated HCl emissions below are based on 99.98% abatement.

New Post-project TAC Emissions

	Emissions from A-147 & A-149 (lbs/day)	Abated Emissions, Average (lbs/hour)	Abated Emissions (lbs/yr)	Acute Trigger Level (lbs/hour)	Chronic Trigger Level (lbs/yr)
Hydrogen Chloride	10.3	0.00009	0.788	4.6	350

As there is no increase in emissions of the organic TACs listed above nor in ammonia emissions and since the emissions of HCl as a secondary pollutant from the proposed abatement of the MEI vent emissions at the HAF units will be less than the acute and chronic trigger levels in Table 2-5-1 of Regulation 2, Rule 5, this project does not trigger review under Regulation 2, Rule 5.

Note that when the initial permit was issued for the MEI Plant in 1990, the permit conditions included a list of toxic air contaminants which were reviewed in the Risk Screening Analysis performed at that time. Part 5 of the condition specifies that if any additional toxic compounds were identified in the source test performed after startup, then a revised Risk Screening Analysis or other information showing that the additional compounds are less toxic than methyl chloroacetate must be submitted. The source test did identify several unexpected TACs which were determined to be present as impurities in the raw materials used in the MEI process. A revised risk analysis was submitted for the additional compounds - chloroform, trichloroethylene, tetrachloroethane, carbon tetrachloride, and perchloroethylene. The analysis showed the additional compounds to be less toxic than methyl chloroacetate for acute effects and the additional risk from these compounds was less 1 in a million for lifetime exposure. This level was at the time and is still currently deemed less than significant, therefore, the additional compounds will be added to the list of reviewed TAC compounds in the permit conditions.

Major Facility Review, Regulation 2, Rule 6

This facility is a major facility, as it is currently subject to the requirements of 40 CFR Part 70, codified in District Regulation 2, Rule 6. As a major facility, this facility was required to obtain a Title V Federal Operating Permit. The District issued the initial Title V permit to this facility on December 1, 2003. The permit was reopened and reissued on October 28, 2004 and a minor permit revision was issued on October 3, 2005. The proposed MEI Project if approved will constitute a significant revision to the Title V permit, and the revision will be processed under a separate action after action is taken on this application.

District Regulation 3, "Fees"

District Regulation 3 specifies the fees required for applications requesting Authorities to Construct, Permits to Operate, and also the operating permit fees. The applicant has paid the fees required under Regulation 3.

District Regulation 7, "Odorous Substances"
District Regulation 7 places limits on odorous substances and compounds. Section 7-303 limits emissions of ammonia to no more than 2500 ppm. Source S-595 is a source of ammonia emissions, however it is abated by the Ammonia Scrubber, A-149, and is currently limited to an ammonia concentration of no more than 200 ppm. There is no increase in ammonia emissions associated with the proposed project and actual emissions will be reduced, therefore continued compliance with this emission limit is expected.

District Regulation 8, Rule 1, "Organic Compounds – General Provisions"
District Regulation 8, Rule 2, "Organic Compounds – Miscellaneous Operations"
District Regulation 8, Rule 2 applies operations which are sources of precursor organic compound emissions and which are not subject to any other rule in Regulation 8. The MEI Plant is currently subject to the emission limitations in Section 8-2-301. However as part of the proposed modifications, Dow will be routing the emissions from the MEI Plant to one of the existing Thermal Oxidizers, S-336 or S-389, operated at this site. If both of the oxidizers are unavailable, the emissions would be routed to a backup Carbon Adsorber, A-205. Due to this proposed abatement, the post-project MEI Plant will no longer be subject to Section 8-2-301 per the exemption in Regulation 8, Rule 1, Section 110.3. This section exempts operations which would otherwise be subject to Regulation 8, Rules 2 or 4, from Regulation 8 if the organic compounds from the operations are reduced by at least 85% by weight and at least 90% by weight if the abatement occurs through incineration.

The Thermal Oxidizers achieve a minimum abatement efficiency of 99.99% by weight. This efficiency is required by the Boiler and Industrial Furnace (BIF) permits, and the units are tested periodically to demonstrate compliance with this requirement. The backup carbon adsorption system is expected to meet a 99% control efficiency with fresh carbon and will be monitored to ensure a minimum of 90% control. It will consist of a portable carbon unit containing a minimum of 1,800 lbs of carbon up to 5,500 lbs of carbon. Loading calculations have shown that the highest expected organic concentrations, the life of the minimum sized carbon bed is 96 hours. Therefore, after 96 hours of use, daily monitoring will be performed when the carbon unit is used to ensure a minimum of 90% control. The carbon will be changed out at the point that the outlet VOC content reaches 10% of the inlet concentration or at 96 hours of use. As the post-project emissions from the MEI Plant will be abated by 90% by weight or more, the MEI Plant will be exempt from Regulation 8 per Section 8-1-110.3 after the MEI Plant Phase I modifications are complete.

District Regulation 8, Rule 9, "Organic Compounds – Vacuum Producing Systems"
District Regulation 8, Rule 10, "Organic Compounds – Process Vessel Depressurization"
District Regulation 8, Rules 9 and 10 regulate precursor organic compounds and organic compounds from vacuum systems and depressurization and opening of process vessels. Both regulations apply to the Dow Pittsburg facility. Rule 8-9 requires that non-condensable precursor organic emissions from vacuum systems must be controlled through incineration or contained and treated in another manner which prevents their emission to the atmosphere. A few of the MEI process units are operated under vacuum and are therefore subject to this rule. The MEI process vents are currently abated by one or more scrubbers, and after implementation of this project, will also be further abated at one of the HAF units or at an additional scrubber. The existing and proposed additional control strategies meet the requirements of this rule.

A few of the MEI process vessels are operated under pressure, but the process is not currently subject to Rule 8-10, since Section 114 exempts batch process vessels from the requirements of the rule. After conversion of sections of the MEI Plant to a continuous process in Phase II of the proposed project, Rule 8-10 will apply to these sections, S-594 and S-596. At that time, both the standards regarding depressurization and opening of the process vessels will apply. The requirement in Section 8-10-301 requiring control of organic emissions through incineration or other treatment will be met through the existing and proposed abatement

strategies (scrubbers and/or HAF units). Dow is expected to comply with Section 8-10-302, which allows a the maximum concentration limit of 10,000 ppm as methane to be vented to the atmosphere upon opening of a vessel, unless the provisions of Section 8-10-302.2 are met. In addition, the recordkeeping, monitoring, and reporting requirements in Sections 8-10-401, 501, 502, and 503 will apply. Dow is expected to comply with these requirements.

District Regulation 8, Rule 18, "Organic Compounds – Equipment Leaks"
District Regulation 8, Rule 22, "Organic Compounds – Valves and Flanges at Chemical Plants"
District Regulation 8, Rule 28, "Organic Compounds – Epidsodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants"
The Dow facility as a whole is subject to the equipment leak inspection, monitoring, recordkeeping, and reporting requirements in Regulation 8, Rules 18 and 22, and the reporting requirements in Regulation 8, Rule 28. The fugitive emission inspection and monitoring program will continue to apply to the MEI Plant after implementation of the proposed modifications. Continued compliance with this plan and these regulations is expected.

40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS)
District Regulation 10 includes by reference the federal New Source Performance Standards (NSPS), 40 CFR Part 60. There are several New Source Performance Standards that regulate the following:

- ***Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes is regulated under Subpart III.***
- ***Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations is regulated under Subpart NNN.***
- ***Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes is regulated under Subpart RRR***

Subparts III, NNN, and RRR each apply to affected facilities that produce any of the chemicals listed in §60.617, §60.667, and §60.707 respectively, as a product, co-product, by-product, or intermediate. Neither the product MEI or by-product, , are listed in §60.617, §60.667, or §60.707, therefore these subparts do not apply to the MEI Plant. The MEI process is not subject to any of the New Source Performance Standards in 40 CFR Part 60 and is not subject to District Regulation 10.

40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAPs)
There is a National Emission Standard for Equipment Leaks, 40 CFR Part 61, Subpart V. This subpart applies to sources intended ot operation in volatile hazardous air pollutant (VHAP) service. "In VHAP service" is defined as

> **"… a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10% by weight a volatile hazardous air pollutant as determined according to the provisions of §61.245(d)."**

Volatile hazardous air pollutant is defined as "a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated." Benzene and vinyl chloride are VHAPs. Since the MEI Plant does not process benzene or vinyl chloride, Subpart V does not apply.

40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories/Maximum Achievable Control Technology (MACT) Standards

Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions
Subpart FFFF, National Emission Standards for Hazardous Air Pollutants – Miscellaneous Organic Chemical Manufacturing National Emission Standard for Hazardous Air Pollutants (MON)

This rule was promulgated by EPA on November 10, 2003, and established emission standards for miscellaneous organic chemical manufacturing process units located at major sources of hazardous air pollutants. A miscellaneous organic chemical manufacturing process unit is defined as:

> **"… all equipment which collectively function to produce a product or isolated intermediate that are materials described in §63.2435(b). …"**

The materials in §63.2435(b) include:

- ***An organic chemical(s) classified using the 1987 version of SIC code 282, ,283, 284, 285, 286, 287, 289, or 386***
- ***An organic chemical(s) classified using the 1997 version of the NAICS code 325***
- ***Quaternary ammonium compounds and ammonium sulfate produced with caprolactam***
- ***Hydrazine***

MEI is an organic intermediate which is further processed at another location into an herbicide and the production of MEI falls under SIC Industrial Group 2879, Agricultural Chemicals, Not Elsewhere Classified includes:

> **"Establishments primarily engaged in the formulation and preparation of ready-to-use agricultural and household pest control chemicals, including insecticides, fungicides, and herbicides, from technical chemicals or concentrates; and the production of concentrates which require further processing before use as agricultural pesticides. …"**

Therefore since the MEI Plant is used to produce a material classified under SIC code 287 and since the plant processes, uses, or generates one of the organic HAP listed in section 112(b) of the Clean Air Act (methylene chloride and methanol), the MEI Plant is subject to this regulation.

EPA extended the compliance deadline for this rule to May 10, 2008. Dow has until this compliance date to formally declare a plan to comply with the requirements of this rule. The compliance plan and specific list of applicable sections will be added to the Title V permit in a separate action after the compliance deadline. With the Title V permit modification for the proposed MEI project, this regulation will be added to the permit as a future effective requirement.

40 CFR Part 70, State Operating Permit Programs (Title V)

This facility is a major facility, as it is currently subject to the requirements of 40 CFR Part 70. As a major facility, this facility is subject to the federal permit requirements of 40 CFR Part 70. The requirements of this program have been codified in District Regulation 2, Rule 6. See the discussion of Rule 2-6 above.

Permit Conditions

The existing MEI Plant is subject to Permit Condition #4780. A number of changes have been made to the permit conditions, as indicated below in strikeout/underline format. Terms

that apply only to sources exempt from District permit requirements have been removed, as exempt sources are not subject to permit requirements and therefore not subject to permit conditions. Review of the original permit for the MEI Plant has confirmed that the existing permit condition limiting daily POC emissions to 8 lbs/day was imposed to ensure that annual emissions from the plant do not exceed level of annual emissions assessed and for which offsets were provided. The basis for these types of conditions is cited as "cumulative increase" as the emissions and emission increases for new or modified permitted sources are added to the cumulative increase for the facility. A daily limit is more stringent than necessary to ensure compliance with an annual emission level, therefore the existing emission limit has been clarified to reflect that the existing emission limit is not a highest day limit, but an average daily limit. The condition text has been updated to the current standard format.

In addition, future effective conditions have been added to reflect the addition abatement proposed under this project. A future effective condition has been added to the conditions requiring a source test upon startup of Phase II of the proposed modifications to the MEI Plant and ongoing monthly monitoring of compliance with this limit thereafter. Amendments have been made to the existing abatement requirements to reflect the the proposed additional abatement at one of the HAF units or the backup carbon system. These new abatement requirements will be effective upon startup of Phase I of the proposed modifications. Also, the additional TAC emissions that were reported after initial startup of the MEI plant (see discussion under Health Risk Assessment Requirements above) were added to the list of compounds reviewed per the District's toxic risk progam. A final component count will be required when construction is complete to ensure that the emissions from fugitive leaks do not exceed the assessed levels.

Permit Condition #4780
Applications 4128, 16468, 8894, 14456
Permit Conditions for Sources:
S-593, Plant 640, Section 1~~, including: R-101, R-201, R-1~~;
S-594, Plant 640, Section 2
S-595, Plant 640, Section 3
S-596, Plant 640, Section 4~~, including: B-1701, R-280~~;
S-604, Truck Loading Facility Plant 640; and
~~S-606, T-602 Plant 640 (exempt)~~
S-607, T-1904 Plant 640 ~~and~~
~~***S-618, Cooling Tower (exempt)***~~
Abated by:
A-146, Packed Bed NMP Scrubber B-3000
A-147, B-3210 Packed Bed Water Scrubber
A-148, Packed Bed Water Scrubber B-3200/B-3201

A-149, B-1303 Packed Bed Water Scrubber~~:~~
A-205, ME-3220 Backup Carbon Adsorber
S-336, Manufacturing Services Halogen Acid Furnace
S-389, Sym-Tet Halogen Acid Furnace

1. The owner/operator shall ensure that combined ~~E~~emissions of precursor organic compounds to the atmosphere from the MEI Plant 640 (S-593, S-594, S-595, and S-596) ~~A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined~~ do~~shall~~ not exceed 8 pounds ~~on any~~ per day, averaged over each calendar month.

(Basis: Cumulative Increase)

*2. The owner/operator shall ensure that combined ~~E~~emissions of 4-amino-3,5 dichloro-2,6 difluoro pyridine to the atmosphere from the MEI Plant 640 ~~A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined~~ do~~shall~~ not exceed 0.02 pounds on any day.
(Basis: TRMP)

*3. The owner/operator shall ensure that combined ~~E~~emissions of ammonia to the atmosphere from the MEI Plant 640~~A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined~~, do~~shall~~ not exceed 0.02 pounds on any day~~;~~ and that the exhaust concentration does not exceed 200 ppm. ~~the exhaust concentration of ammonia from either P-242 or P-243 shall not exceed 200 ppm at stack exit conditions~~.
(Basis: TRMP)

4. Deleted.

*5. If ~~the~~ any source test conducted for this plant identifies the emission of any ~~material~~ compound not identified in the below listing, then the ~~applicant~~ owner/operator shall submit a either a revised Risk Screening Analysis or sufficient information to indicate that emissions of the new ~~material~~ compound are~~is~~ less ~~toxic~~ than the applicable trigger levels listed in Regulation 2, Rule 5, Table 2-5-1~~Methyl Chloroacetate~~:

Methyl Chloroacetate (MCA)
4-amino-3,5 dichloro-2,6 difluoro pyridine
N-Methyl Pyrrolidone (NMP)
Methyl Chloride
Methanol
Ethylene Glycol
Fully Halogenated Heterocycle (FHC)
Ammonia
Potassium Chloride
Potassium Hydroxide
Chloroform
Trichloroethylene
1,1,1,2-Tetrachloroethane
Perchloroethylene
Carbon Tetrachloride

(Basis: ~~TRMP~~BAAQMD Regulation 2, Rule 5)

6. The owner/operator shall ensure that there ~~shall be~~are no detectable organic emissions from Tank Truck Loading at source S-604. "Detectable emissions" for the purpose of this permit condition is defined as 100 ppm organic as methane measured 1 cm from the source using an FID, OVA, or equivalent monitoring device.
(Basis: Cumulative Increase, TRMP)

7. Deleted.

8. Deleted.

9. Deleted.~~The S-618 Cooling Tower shall circulate a maximum of 6200 gpm water and shall not exceed 2500 ppm (wt) Total Dissolved Solids, nor emit more than 1 lb/day (wt)~~

~~Volatile Organic Compounds as defined in District Reg 1-236. Cooling water shall be tested on a monthly basis for the first 6 months of operation, then quarterly afterwards, in order to confirm compliance with this condition.~~
~~(Basis: BAAQMD Regulation 6-301, Cumulative Increase)~~

10. Deleted.

11. The owner/operator shall ensure that total rail car shipments ~~at~~ for the MEI Plant 640 (S-593, S-594, S-595, and S-596) ~~combined shall~~ do not exceed ~~210~~ 330 cars per ~~year~~consecutive 12-month period.
(Basis: Cumulative Increase)

*12. The owner/operator shall ensure that ~~proposed modification to~~ MEI Plant 640 (S-593, S-594, S-595, and S-596) ~~shall~~ does not ~~result~~ cause~~in~~ any detectable off-property odors as defined in District Regulation 7. The owner/operator of Plant 640 shall take immediate measures to eliminate any suspected or identified odorous emissions to the satisfaction of the APCO.
(Basis: BAAQMD Regulation 7-301)

*13. The owner/operator shall ensure that ~~A~~all materials handled at Tank Truck Loading source S-604 ~~shall not be~~are not spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere.
(Basis: TRMP)

14. The owner/operator shall ensure that the MEI Plant 640 (S-593, S-594, S-595, and S-596) product (herbicide intermediate) ~~shall only be~~is loaded only in solid form, with sufficient moisture present to prevent visible emissions and odors from occurring at the loading site.
(Basis: TRMP, Cumulative Increase)

15. Deleted.

16. To demonstrate compliance with these conditions, the owner/operator of S-593, S-594, S-595, S-596, and S-604~~, and S-618~~ shall maintain the following ~~appropriate~~ records ~~in order to confirm compliance with Parts #9, 11, and 18:~~.
   a. The number of railcar shipments received for materials to be used at the MEI Plant 640 and offsite railcar shipments from the MEI Plant 640, totaled each month for the previous 12-month period;
   b. Records indicating whether the emissions from A-147 and A-149 are abated at S-336, S-389, or A-205;
   c. Records of the number of hours that the emissions from A-147 and/or A-149 are vented to A-205, summed each month for the previous 12-month period;
   d. A summary of the hours of A-205 use since last carbon changeout. After 96 hours of use on a carbon bed, record of carbon changeout or daily records of the monitored inlet and outlet organic compound concentrations for A-205 for each day of use until carbon changeout;
   e. Records of all source tests performed to demonstrate compliance with Part 1 and the POC emission factor derived from the source test to be used for compliance calculations until the subsequent source test;
   f. Monthly POC emission calculations to demonstrate compliance with Part 1.

   These records shall be kept on file for a minimum of five years and shall be made available to District personnel upon request.
   (Basis: Cumulative Increase, ~~BAAQMD Regulation 6-301,~~ BAAQMD Regulation

2-6-501)

~~16.~~17. The owner/operator shall ensure that the A-147 Scrubber ~~(P-242) shall~~ abates S-593, S-594, S-596, ~~S-606,~~ and S-607 at all times each source is operating. ~~, and~~ The owner/operator shall ensure that the A-149 Scrubber ~~(P243) shall~~ abates S-595 at all times S-595 is ~~operating~~generating ammonia emissions.
(Basis: Cumulative Increase~~, BAAQMD Regulation 8, Rule 2~~)

18. To demonstrate compliance with the emission limit in Part 1 ~~and with Regulation 8-2-301~~, the owner/operator shall perform a District-approved source test to measure the combined POC emissions from A-147 and A-149 no later than 60 days from the startup of the Phase II modifications to the MEI Plant 640 and at least once every 5 years thereafter. The owner/operator shall obtain approval of all source test procedures from the District's Source Test Section prior to conducting any tests and shall notify the Manager of the District's Source Test Section, in writing, of the source test protocols and the projected test dates at least seven (7) days prior to the test~~, to provide the District staff the option of observing the testing~~. Within ~~45~~ 60 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition.
(Basis: Cumulative Increase~~, Regulation 8-2-301~~)

19. The following abatement requirements will become effective upon startup of the Phase I modifications to the MEI Plant 640: The owner/operator shall ensure that S-595 is abated by A-147 whenever S-595 is operating and not being abated at A-149. The owner/operator shall ensure that the emissions from A-147 and A-149 are further abated at either S-336 or S-389, unless both units are not operating. If both S-336 and S-389 are unavailable, the emissions from A-147 and A-149 shall be abated at the Backup Carbon Adsorber, A-205.
(Basis: Cumulative Increase)

20. Beginning with the startup source test required by Part 18 above, the owner/operator shall derive a POC emission factor from each source test for use in calculation of POC emissions to the atmosphere from the MEI Plant 640 to demonstrate compliance with Part 1. This emission factor shall be used to calculate POC emissions on a monthly basis until the next source test is performed and a new emission factor is derived. The POC emissions to the atmosphere from the MEI Plant 640 shall be calculated as the combined emissions from A-147 and A-149, reduced by:
    a. 99.99% by weight for the periods that the A-147/A-149 vents were directed to S-336 or S-389 or
    b. 90% by weight for the periods that the A-147/A-149 vents were directed to A-205.

    (Basis: Cumulative Increase)

21. The owner/operator shall ensure than the A-205 Backup Carbon Adsorber is equipped with at least 1800 lbs of activated carbon.
(Basis: BAAQMD Regulation 2-1-301)

22. The owner/operator shall ensure that use of A-205 to abate the emissions from A-147 and A-149 does not exceed 1,440 hours in any consecutive 12-month period.
(Basis: Cumulative Increase)

23. The owner/operator shall ensure than the A-205 Backup Carbon Adsorber reduces inlet POC emissions by at least 90% by weight. Compliance with this abatement efficiency shall be monitored by tracking hours of use of each carbon bed. After 96 hours of use, the owner/operator may either changeout the carbon bed or monitor abatement efficiency each

day A-205 is in use by measuring both the inlet and the outlet organic compound concentrations. The owner/operator must install fresh carbon in A-205 when the outlet organic concentration reaches 10% of the inlet concentration. During the carbon changeout, if S-593, S-594, S-595, or S-596 is operating, the emissions from A-147 and A-149 must be abated at the in-line spare carbon bed or at S-336 or S-389.
(Basis: Cumulative Increase)

24. The owner/operator shall provide a final valve, flange, pump, and other component count for the modified MEI Plant 640 (S-593, S-594, S596, and S-597) within 45 days of Phase II startup. This submittal shall also include revised fugitive emission calculations for the MEI Plant 640 based on the final component count.
(Basis: Cumulative Increase)

Recommendations

I recommend issuing conditional Authorities to Construct to the following sources and abatement devices:

S-593, Plant 640, Section 1, abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series
S-594, Plant 640, Section 2, abated by A-147, Packed Bed Water Scrubber B-3210
S-595, Plant 640, Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; modified to also be abated by A-147, Packed Bed Water Scrubber B-3210
S-596, Plant 640, Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series

A-147 and A-149 modified to be further abated by one of the following:
S-336, Manufacturing Services HAF,
S-389, Sym-Tet HAF, or
A-205, ME-3220 Carbon Adsorber

S-604, Truck Loading Facility
S-607, Storage Tank T-1904

_____ _____
Tamiko Endow Date
Air Quality Engineer

Engineering Evaluation Report

Dow Chemical Company, P#31
901 Loveridge Road, Pittsburg
Application #14668

Background

Dow Chemical has applied to replace two process vessels (T-7 and B-9), which are permitted as part of the Manufacturing Services Facility, S-434. Both vessels are being replaced due to age and will be replaced with identically-sized vessels. The replacement will not affect the process throughput or system capacity.

- Vessel T-7 is used to blend carbon tetrachloride with process recycle streams prior to distillation. It is being replaced with an identically sized horizontal pressure vessel, and the new vessel will continue to be vented to the Manufacturing Services Thermal Oxidizer, S-336.
- Vessel B-9 is used to absorb hydrogen chloride vapor into water to produce hydrochloric acid. The replacement vessel dimensions and capacity are identical to the current vessel, and the replacement will continue to be vented to the caustic scrubber, A-199.

S-434, Manufacturing Services Facility

Emission Calculations

As the two process vessels will be replaced with vessels of identical size, will continue to be abated in the same manner as the current vessels, and the number of piping components will not change, there is no change in emissions associated with these replacements.

Cumulative Increase

As there is no change in emissions associated with the replacement of these two process vessels, there will be no change to the cumulative increase associated with this application.

Compliance Determination

Regulation 6, "Particulate Matter and Visible Emissions"
Regulation 8, Rule 2, "Organic Compounds – Miscellaneous Operations"
Regulation 8, Rule 10 "Organic Compounds – Process Vessel Depressurization"

S-434, Manufacturing Services Facility is subject to Regulation 6 due to potential emissions of acid mist and is subject to Regulation 8, Rules 2 and 10 due to emissions of organic compounds. To meet the emission limits in Regulation 6 and Regulation 8, the source is currently abated through one of three scenarios – the first includes abatement at two hydrochloric acid absorbers in series (A-87 and A-85), followed by an additional scrubber (A-199); the second is abatement at the Manufacturing Services Thermal Oxidizer (S-336); and the third is abatement at the Manufacturing Services Scrubber only (A-199). Dow has not requested any change to the abatement options due to replacement of the two process vessels, so continued compliance with these regulations is expected.

Public Notice Requirements

The public notification requirements of Regulation 2-1-412 apply to modifications which result in an increase in toxic air contaminant or hazardous air contaminant emission at facilities within 1,000 feet of the boundary of a K-12 school. There is no increase in toxic air contaminant emissions associated with this application, therefore the public notice requirements do not apply.

Toxic Risk Assessment
The District's regulation concerning toxic air contaminants is codified in Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. There is no change in emissions due to these replacements, including emissions of toxic air contaminants, therefore, a Health Risk Screening Analysis is not triggered.

PSD, NSPS, NESHAPS
PSD does not apply to this source. There is no New Source Performance Standard that applies to this source, however it is subject to 40 CFR Part 63, Subpart NNNNN, National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production. The compliance dates for this federal regulation occur this year and Dow will be performing source testing to demonstrate compliance with the emission standards in this regulation. The source testing is scheduled to occur within the next 2 months. The results of the compliance testing and the specific compliance options that Dow elects will be documented and included in the Title V permit for this facility after they have been established.

CEQA
This project is exempt from CEQA review, per Sections 2-1-312.6 and 312.7:

> *"Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing."*

and

> *"Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced."*

In this case, the replacement of two process vessels (constituting a portion of S-434) involves no expansion of use beyond that currently permitted for S-434, will involve no change in emissions, and the two new vessels will have exactly the same purpose and capacity as the replaced vessels.

BACT, Emission Offsets
BACT requirements are triggered if maximum potential emissions from a new or modified source are 10 lbs/day or more. As the replacement of these 2 process vessels will not result in any increase in emissions, the replacement does not constitute a modification of S-434, therefore BACT requirements do not apply.

Emission offsets are required for new or modified sources at a facility meeting the requirements in Regulation 2, Rule 2 for each type of pollutant. Since the process vessel replacement does not constitute a modification of S-434, the offset requirements do not apply.

Permit Conditions
This source S-434 is currently subject to the abatement requirements contained in the existing Permit Condition #17985 below and will be subject to the throughput limit issued under Application #6290 for permitting of the new Sulfuryl Fluoride Plant once the Sulfuryl Fluoride Plant is put into service (expected to occur within the next 2 years). No changes to the condition are proposed due to replacement of the two process vessels under this application.

Permit Condition #17985
Applications 2160, 11591, 16468
For S-4, Central Rail Loading Rack, Acid, TC-1:
For S-434, Manufacturing Services Facility:
For S-576, HCL Storage Tank, T-122:
For A-85, B-102 Absorber;
A-87, HCl Absorber/Heat Exchanger H-109;
A-199, Caustic Scrubber;

S-336, Manufacturing Services Thermal Oxidizer

1. The HCL Rail Car Loading Operations (S-4) shall be abated by either the S-336 Thermal Oxidizer, or by the A-199 Caustic Scrubber, during all times that hydrochloric acid is being loaded.
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)

2. Emissions from the S-434 Manufacturing Services Facility shall be abated by either the Manufacturing Services Thermal Oxidizer (S-336) or the Acid Absorbers (A-87 and A-85) and A-199 Caustic Scrubber in series or the Caustic Scrubber (A-199).
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)

3. The Hydrochloric Acid Storage Tank T-122 (S-576) shall be abated by the properly operating Acid Absorbers (A-87 and A-85) and the Caustic Scrubber (A-199), in series, at all times that S-576 is operating.
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)

4. There shall be no detectable leaks in Storage Tank T-122 (S-576) or the piping to abatement devices A-87, A-85, and A-199.
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)

5. S-576 shall be blocked in, with no detectable emissions, whenever A-87, A-85, or A-199 is out of service.
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)

6. The caustic concentration in the A-199 Caustic Scrubber shall not drop below 1% by weight of sodium hydroxide (NaOH).
(Basis: BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

7. The caustic solution in the A-199 Caustic Scrubber shall be tested at least once per calendar day to determine pH and weight percent of NaOH concentration.
(Basis: BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

8. The Permit Holder shall maintain daily records of all test results from Part 7 above. All records shall be retained on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

Future condition:

9. The total amount of hydrochloric acid produced at the S-434 Manufacturing Services Facility shall not exceed 108,300 tons of hydrochloric acid (calculated as 36% HCl) during any consecutive 12 month period. In order to demonstrate compliance with this part, the Permit Holder shall maintain monthly records of the total amount of 36% HCl produced at S-434. These records shall be kept onsite or made available for District staff upon request for at minimum of five years from the entry date.

(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 2-6-501)

Recommendations

I recommend waiving the Authority to Construct and issuing a Permit to Operate for:

Replacement of 2 process vessels at S-434, Manufacturing Services Facility

_____ _____

Tamiko Endow Date
Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 14909

BACKGROUND

Dow Chemical Company (Dow) is changing the location of DCP Unloading from an existing loading area located near DCP Storage Tanks (S-580, S-581, S-582, and S-583) to a product loading area (S-5). During DCP unloading at the existing location the rail car or tank truck used to fill tanks S-580, S-581, S-582, and S-583 is in a location that blocks access to areas of the facility. The rail car and/or tank truck is in the way of vehicle traffic at the existing DCP unloading area.

The current DCP unloading area is not identified as an existing source. There is a requirement on Condition No. 3195 for the DCP tanks that requires the use of a vapor balance during all tank filling operations.

Per the applicant there will be no increase in DCP throughput due to moving the DCP loading area from the existing location to the product loading area at S-5.

DCP has a true vapor pressure of 0.413 psia @ 61°F. The average ambient temperature in Pittsburgh is 61°F, and the average storage temperature of the liquid at the site is assumed to be 61°F. The true vapor pressure of 1-3 dichloropropene at 25°C is between 0.658 psia and 0.832 psia. The vapor pressure of the material is greater than 0.5 psia, and this makes the dichloropropene unloading operation subject to the requirements of Regulation 8 Rule 6.

The District has never estimated the fugitive emissions from the existing DCP unloading area. These emissions were never thought to be significant based on the vapor pressure of DCP and the fact that the unloading of DCP was abated by a vapor balance system (A-140). The DCP unloading operations propsed to be conducted at S-5 would also be abated by the vapor balance system (A-140).

S-5 is approximately 1,400 feet away from the existing DCP unloading area. In order to maintain fugitive emissions at the same or below the current levels, Dow is installing a 2” welded stainless steel pipe from S-5 to the DCP tanks to carry liquid DCP. Dow is also installing a 2” welded stainless steel pipe from S-5 to the DCP tanks to act as the the vapor balance during DCP loading operations at S-5. The number of valves and flanges will remain at or below existing counts.

This application will require a change of permit conditions for the following equipment:

S-5, 720 Terminalized Products

S-5 is regulated by Condition No. 11276. Item 3 of this condition will have text added that states that all DCP unloading operations at S-5 shall be abated by a vapor balance (A-140). The modified condition text and the final condition in the Conditions section of this evaluation.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.102	0.000	0.102

Toxic Risk Screening:

DCP does not have a Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-5 shall comply with the revised Permit Condition No. 11276.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8 Rule 6 Terminals and Bulk Plants. The true vapor pressure of 1-3 dichloropropene at 25°C is between 0.658 psia and 0.832 psia. The vapor pressure of the material is greater than 0.5 psia, and this makes the dichloropropene unloading operation subject to the requirements of Regulation 8 Rule 6. This standards under this rule require a vapor loss control system or a vapor balance for loading and unloading of materials with a vapor pressure of at least 1.5 psia. Even though dichloropropene does not have a vapor pressure of at least 1.5 psia, the use of a vapor balance system (A-140) during DCP unloading operations meets the standards of this rule for higher vapor pressure materials.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8-18 Equipment Leaks. The installation of welded stainless steel lines for the DCP liquid line and the vapor balance should reduce leaks associated with DCP unloading.

The requirements of Regulation 8 Rule 22 do not apply to this facility (8-22-115).

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 which states:

Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Changes to Condition No. 11276 in Strikethrough/Underline format.

```
        COND#  11276   ---------------------------------------

Applications 31263, 4451, 12387, 16468
For S-5, 720 Terminalized Products:
For S-6, 725 Terminalized Products:
For S-7, 725 Block Truck Loading:
For S-27, Terminalized Product Storage, T-605A:
For S-29, Terminalized Products, T-608A:
For S-30, Material Flow Tank, T-608B:
For S-31, Terminalized Products, T-609:
For S-33, Terminalized Products, T-727:
For S-35, Terminalized Products, T-773:
For S-151, Terminalized Products, T-614:
For S-153, Terminalized Products, T-604:
For S-482, Carbon Tetrachloride Rail Car Loading:
A-140, Vapor Balance System for 1,3-Dichloropropene Unloading
A-150, Vapor Balance System for Styrene Tank Truck Loading
A-151, Vapor Balance System for Styrene Loading Via Railcar
S-336, Manufacturing Services Thermal Oxidizer
S-389, Sym-Tet Thermal Oxidizer R-501

1.  The following sources shall be abated by a Thermal
    Oxidizer (either S-336 or S-389) whenever non-exempt
    materials (materials with vapor pressure of 0.5 psia or
    greater) are being loaded or stored. The S-336 Thermal
    Oxidizer shall be the primary abatement device for these
    sources with S-389 acting as a backup abatement device.
     S-5       S-27           S-31           S-151     S-482
     S-6       S-29           S-33           S-153
     S-7       S-30           S-35
   (Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8 -
   6-302, BAAQMD Regulation 8-6-304)

2.  All of the sources listed in Part #1 shall have vapor
    tight connections to S-336 and S-389 with no detectable
    organic emissions.
   (Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8-6-
   306)
```

*3. The Vapor Balance System for styrene tank truck loading (A-150) shall be properly maintained and operated and shall abate S-5 during any styrene loading operation. The Vapor Balance System for 1,3-dichloropropene (DCP) tank truck or railcar unloading (A-140) shall be properly maintained and operated and shall abate S-5 during any DCP unloading operation. (Basis: ~~Voluntary Limit~~ Cumulative Increase)

*4. The Vapor Balance System for Dowanol PM tank truck loading (A-153) shall be properly maintained and operated and shall abate S-6 during any Dowanol PM loading operation.
(Basis: Voluntary Limit)

5. During all loading of non-exempt products at S-5, S- 6, S-7, and S-482, the operator shall confirm that the vapor return line is registering vacuum before connecting the line. The operator shall also verify that there is a leak tight connection to the tank truck or railcar.
(Basis: BAAQMD Regulation 8-6-306)

6. The owner/operator shall maintain records for all non-exempt product loading events, including the date, verification of vacuum, and leak tight connection to the tank truck or railcar. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-306, BAAQMD Regulation 8-6-501.2)

Modified Permit Condition No. 11276.

COND# 11276 ----------

Applications 31263, 4451, 12387, 16468
For S-5, 720 Terminalized Products:
For S-6, 725 Terminalized Products:
For S-7, 725 Block Truck Loading:
For S-27, Terminalized Product Storage, T-605A:
For S-29, Terminalized Products, T-608A:
For S-30, Material Flow Tank, T-608B:
For S-31, Terminalized Products, T-609:
For S-33, Terminalized Products, T-727:
For S-35, Terminalized Products, T-773:
For S-151, Terminalized Products, T-614:
For S-153, Terminalized Products, T-604:
For S-482, Carbon Tetrachloride Rail Car Loading:
A-140, Vapor Balance System for 1,3-Dichloropropene Unloading
A-150, Vapor Balance System for Styrene Tank Truck Loading
A-151, Vapor Balance System for Styrene Loading Via Railcar
S-336, Manufacturing Services Thermal Oxidizer
S-389, Sym-Tet Thermal Oxidizer R-501

1. The following sources shall be abated by a Thermal Oxidizer (either S-336 or S-389) whenever non-exempt materials (materials with vapor pressure of 0.5 psia or greater) are being loaded or stored. The S-336 Thermal Oxidizer shall be the primary abatement device for these sources with S-389 acting as a backup abatement device.

S-5	S-27	S-31	S-151	S-482
S-6	S-29	S-33	S-153	
S-7	S-30	S-35		

(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8 - 6-302, BAAQMD Regulation 8-6-304)

2. All of the sources listed in Part #1 shall have vapor tight connections to S-336 and S-389 with no detectable organic emissions.
(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8-6-306)

*3. The Vapor Balance System for styrene tank truck loading (A-150) shall be properly maintained and operated and shall abate S-5 during any styrene loading operation. The Vapor Balance System for 1,3-dichloropropene (DCP) tank truck or railcar unloading (A-140) shall be properly maintained and operated and shall abate S-5 during any DCP unloading operation. (Basis: Cumulative Increase)

*4. The Vapor Balance System for Dowanol PM tank truck loading (A-153) shall be properly maintained and operated and shall abate S-6 during any Dowanol PM loading operation.
(Basis: Voluntary Limit)

5. During all loading of non-exempt products at S-5, S- 6, S-7, and S-482, the operator shall confirm that the vapor return line is registering vacuum before connecting the line. The operator shall also verify that there is a leak tight connection to the tank truck or railcar.
(Basis: BAAQMD Regulation 8-6-306)

6. The owner/operator shall maintain records for all non-exempt product loading events, including the date, verification of vacuum, and leak tight connection to the tank truck or railcar. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-306, BAAQMD Regulation 8-6-501.2)

RECOMMENDATION

Issue a Change in Permit Condition for Condition No. 11276. The following sources are subject to Condition No. 11276:

S-5, 720 Terminalized Products:
S-6, 725 Terminalized Products:
S-7, 725 Block Truck Loading:
S-27, Terminalized Product Storage, T-605A:
S-29, Terminalized Products, T-608A:
S-30, Material Flow Tank, T-608B:
S-31, Terminalized Products, T-609:
S-33, Terminalized Products, T-727:
S-35, Terminalized Products, T-773:
S-151, Terminalized Products, T-614:
S-153, Terminalized Products, T-604:
S-482, Carbon Tetrachloride Rail Car Loading:

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 15133

BACKGROUND

Dow Chemical Company (Dow) is replacing S-464, Plant 663, D-413 Dryer with a New Unit. Dow considers the dryer replacement to be like for like. The dimensions and maximum throughput of the units are the same. The existing dryer S-464 is abated by a bag filter (A-95) and a vacuum system with condenser (A-114). The new dryer S-465 will also be abated by A-95 and A-114. The emissions from the new dryer will be the same as for the old dryer. The emission factor used to estimate emissions for this application is more refined than the original permit emissions estimate for this source. Emission Calculations are documented below.

Regulation 2-1-232.4 requires the District to consider the new dryer (S-465) as a New Source.

2-1-232 New Source: Any source that meets at least one of the following criteria, except sources which lose a permit exemption or exclusion in accordance with Regulation 2-1-424, shall be considered a new source:
232.1 Any source constructed or proposed to be constructed after March 7, 1979 but which never had a valid District authority to construct or permit to operate.
232.2 Any source which was not in operation for a period of one year or more and did not hold a valid District permit to operate during this period of nonoperation, occurring after March 7, 1979.
232.3 Any relocation of an existing source to a non-contiguous property, except for a portable source.
232.4 Any replacement of a source, including an identical replacement of a source, occurring after March 7, 1979, regardless of when the original source was constructed.
232.5 Any replacement of an identifiable source within a group of sources permitted together under a single source number for the purpose of District permitting convenience.
232.6 “Rebricking” of a glass furnace where changes to the furnace design result in a change in heat generation or absorption.
(Adopted May 17, 2000)

The new dryer will dry out an organic solid that is [redacted] at a centrifuge and sent as a cake to the unit. The dryer operates as [redacted]. The unit operates at a temperature of [redacted]°F. The vapor pressure of the product at the dryer operating temperature is less than 1×10^{-4} psia. The boiling point of the product is greater than 500°F.

Based on the low vapor pressure and high boiling point emissions of organics are expected to be negligible. Fugitive emissions are also expected to be negligible.

EMISSIONS SUMMARY

The new dryer is a source of PM-10 emissions. The emissions of other criteria pollutants are negligible based on the material properties of the product being dried. The vapor pressure of the product at the dryer operating temperature is less than 1 x 10^{-4} psia. The boiling point of the product is greater than 500°F. Fugitive emissions are also thought to be neglible based on these material properties.

The new dryer does not burn fuel. It is a [redacted] exchanger.

Annual Emissions:

Particulate emissions are based on an emission factor for Rotary Dryers from AP-42 (Table 8.12-3, 7/93). The uncontrolled total particulate emission factor for rotary soda ash dryers is 50 lb/ton of product. This is an extremely conservative estimate of unabated particulate emissions from S-465. The soda ash dryers have a constant flow of air through the dryer that will entrain particulate from the product. S-465 is a [redacted] dryer that only has a [redacted] into the dryer. The particulate emissions from [redacted] dryer should be much lower than for a typical rotary dryer. As a conservative estimate the 50 lb particulate/ton of product will be used to estimate PM-10 emissions from S-465.

<u>PM-10</u>

Dryer Max Throughput: [redacted] lb Product/hr, [redacted] ton/hr

Unabated PM-10 lb/yr = [redacted] ton/hr x 8760 hr/yr x 50 lb/ton = [redacted] lb/yr unabated

Dryer is abated by bag filter (A-95) with a particulate removal efficiency of 99.9% per vendor specification. The new dryer is also abated by a downstream vacuum pump and condenser (A-114). Previous emission calculations have assumed a particulate removal efficiency of 90% for this system. This assumption does not seem to be conservative since the particles exiting the baghouse will be in the submicron range. The particulate removal efficiency of A-114 will be assumed to be 50% for emission calculations.

Abated PM-10 from bag filter lb/yr = [redacted] lb/yr (1-0.999) = [redacted] lb/yr, [redacted] ton/yr

Abated PM-10 from A-114 lb/yr = [redacted] lb/yr (1-0.5) = [redacted] lb/yr, [redacted] ton/yr

Maximum Daily Emissions:

Dryer Max Throughput: [redacted] lb Product/hr, [redacted] ton/hr

Unabated PM-10 lb/day = [redacted] ton/hr x 24 hr/day x 50 lb/ton = [redacted] lb/day unabated

Dryer is abated by bag filter (A-95) with a particulate removal efficiency of 99.9% per vendor specification. The new dryer is also abated by a downstream vacuum pump and condenser (A-114). Previous emission calculations have assumed a particulate removal efficiency of 90% for this system. This assumption does not seem to be conservative since the particles exiting the baghouse will be in the submicron range. The particulate removal efficiency of A-114 will be assumed to be 50% for emission calculations.

Abated PM-10 after bag filter lb/day = [redacted] lb/day (1-0.999) = [redacted] lb/day

Abated PM-10 after A-114 lb/day = [redacted] lb/day (1-0.5) = [redacted] lb/day

Plant Cumulative Increase: (tons/year)

The shutdown of S-464 and the startup of S-465 will result in no net increase in emissions. Therefore, the new Plant Cumulative Increase will be 0.000 Tons/year for PM-10.

Pollutant	Existing	New	Total
PM-10	1.619	0.000	1.619

Toxic Risk Screening:

There are no known emissions of Toxic Air Contaminants from the new dryer. The emissions of Toxic Air Contaminants do not exceed any Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-465 shall comply with Reg. 6 (Particulate Matter and Visible Emissions Standards). The applicable requirements of Regulation 6 include the following sections:

6-301 Ringleman Number 1 Limitation
6-305 Visible Particles
6-310 Particulate Weight Limitation
6-311 General Operations
6-401 Appearance of Emissions

S-465 is abated by a bag filter with a particulate removal efficiency of 99.9% (per vendor specification) and should be able to comply with all applicable provisions of Regulation 6.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT for any pollutant. The particulate emissions from the new dryer S-465 are abated by A-95 (bag filter) and A-114 (vacuum system with condenser). The unabated particulate emissions do not exceed 10 lb/day.

Offsets

2-2-303 Offset Requirement, **PM_{10} and Sulfur Dioxide, NSR:** Except as provided by Section 2-2-421, before the APCO may issue an authority to construct or a permit to operate for a new or modified source, of PM10 or sulfur dioxide located at a Major Facility, which will result in a cumulative increase minus any contemporaneous emission reduction credits at the facility, for that pollutant, in excess of 1.0 ton per year since April 5, 1991, emission offsets shall be provided, for the emission from the new or modified source and any pre-existing cumulative increase, minus any onsite contemporaneous emission reduction credits determined in accordance with Section 2-2-605, at a 1.0:1.0 ratio or at a ratio, approved by the APCO, in accordance with subsection 2-2-303.1.
303.1 Emission reduction credits of nitrogen oxides and/or sulfur dioxide may be used to offset increased emissions of PM_{10} at offset ratios determined by the APCO to result in a net air quality benefit. This determination shall be made
Bay Area Air Quality Management District June 15, 2005
2-2-12
after a case-by-case analysis that includes adequate modeling, public notice and opportunity for public comment, and EPA concurrence.
A facility which emits less than 100 tons of any pollutant, subject to this section, may voluntarily provide emission offsets for all, or any portion, of their cumulative increase, at the ratio required above.
(Amended 11/20/91; 6/15/94; 5/17/00)

Dow Chemical Company is not a major source for PM-10. The net emissions from the shutdown of S-464 and the startup of S-465 are zero. Offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Condition for S-464 Existing Dryer

```
COND#  1359    ---------------------------------------

                 Modified Application 16468
                 For S-464, Product Dryer
                 A-95, F-413 Bag Filter
                 A-114, Vacuum System:

                 1.  A-95, the F-413 Bag Filter, and A-114, the Vacuum
                     System, shall be operating whenever S-464 is operating.
                    (Basis:  Cumulative Increase; BAAQMD Regulation 6)
```

Condition for S-465 New Product Dryer

```
COND#  23250   ---------------------------------------

     Application 15133
     For S-465, Product Dryer
     A-95, F-413 Bag Filter
     A-114, C-414 Vacuum System with condensor:

     1. The owner/operator shall only operate S-465
        when the unit is abated by the bag filter (A-
        95) and the vacuum system and condenser (A-
        114).
        (Basis: Cumulative Increase; Regulation 6)

     2. The owner/operator shall equip the bag filter
        (A-95) with a device for measuring the pressure
        differential across the bag filter. The
        owner/operator shall check on a quarterly basis
        that the lines to the pressure differential
        measurement device are not plugged.
        (Basis: Regulation 6-301, 6-310, 6-311, 2-1-
        403)

     3. The owner/operator shall inspect the bag filter
        (A-95) on a weekly basis to ensure proper
        operation. The following items shall be
        checked:
        a. The pressure differential across the bag
           filter shall be checked weekly while the
           system is in a drying cycle and under
           vacuum. This pressure differential shall be
           recorded in a log. The maximum pressure
           differential across the bag filter shall not
           exceed 400 mm Hg absolute.
        b. The material collected by the bag filter
           shall be removed in a timely manner to
           maintain compliance with 3(a) above.
        c. The bag filter cleaning system shall be
```

```
      maintained and operated at sufficient
      intervals to maintain compliance with 3(a)
      above.
   (Basis: Regulation 2-1-403)

4. In order to demonstrate compliance with the
   above permit conditions, the following records
   shall be maintained in a District approved log.
   These records shall be kept on site and made
   available for District inspection for a period
   of at least five years from the date on which a
   record is made.
   a. Records of all inspections (including
      differential pressure readings) and all
      maintenance work including bag replacement
      for the bag filter. Records of each
      inspection shall consist of a log containing
      the date of inspection and the initials of
      the personnel that inspects the bag filter.
      (Basis: Regulation 1-441)
```

RECOMMENDATION

Issue an Authority to Construct to Dow Chemical Company for the following:

S-465 Product Dryer, Plant 663, D-413

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 15723

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of Abatement Device A-86 a falling film hydrochloric acid absorber abating S-336, the Manufacturing Services Thermal Oxidizer. A-86 consists of two vessels in parallel, B-14A and B-14B. Each vessel is approximately 28.36 feet long with an internal diameter of 21.25 inches. The vessels are carbon steel with graphite tubes. The vessels will be replaced sequentially, Dow expects to replace B14-B vessel in 2007, and B14-A in 2008. The vessels are being replaced with identical absorber units (that are being built to original specifications).

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-336 Manufacturing Services Thermal Oxidizer shall continue to comply with Permit Conditions No. 1785, 2501, 5336, 5722, 6859, 7775, 8894, 11276,14722, 16610, 16612, 17971, 17985.

S-336 is also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2, Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

2-1-310 Applicability of CEQA: Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.
310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.
310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.
310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.
(Adopted 7/17/91; Amended 10/21/92)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

This application does not require modifying permit conditions.

RECOMMENDATION

Approve the alteration of the following equipment:

A-86 B-14 A & B
Vapor Recovery
train: ,S336,A-336,/,A21,

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 16041

BACKGROUND

On October 4, 2006 The Dow Chemical Company (Dow) requested an extension of the compliance date for the Pittsburgh Terminal Styrene Tank (T-734, S-25) from the requirements of 40 CFR Part 63 Subpart EEEE (Organic Liquids Distribution, non Gasoline).

S-25 uses a vapor balance system that is permitted by the District and would have met the requirements of Section 63.2346(a)(4). However, Dow could not obtain written certification from the reloading or cleaning facility indicating that this faclitity would also comply with Section 63.2346(a)(4)(vii)(A). The District granted an extension of the compliance extension request to allow Dow time to evaluate options to meet the requirements of 40 CFR Part 63 Subpart EEEE.

This application has been submitted by Dow to alter S-25, remove another styrene day tank from service S-209, and replace the styrene delivery piping and pumps to the Styrene plant in order to meet the regulatory requirements in 40 CFR Part 63 Subpart EEEE.

At the present time styrene is pumped from the styrene storage tank S-25 to a day tank S-209 and from the day tank the styrene is pumped into the latex plant. After the proposed alteration styrene will be pumped from S-25 directly to the latex plant. An existing pump at S-25 will be used as a tank recirculation pump. A new pump will be installed at S-25 to pump styrene to the latex plant. An old pump will be removed at S-209 and there will be no increase in fugitive components for the project.

A new piping run will be installed from S-25 to the latex plant. The new pipe run will be slightly shorter than the existing piping runs. The new piping will be welded stainless steel from the new pump at S-25 to where the piping run ties into the monomer header at the latex plant. All new fugitive components will be subject to Regulation 8 Rule 18 requirements. The count of fugitive components will be reduced for all types except pumps which the post project count will be equal to the pre project count.

This application qualifies for accelerated permitting since: uncontrolled emissions are less than 10 lb/day, no emissions exceed trigger levels in Table 2-5-1, project is not located within a thousand feet from a school, alteration of existing sources does not result in an increase of emissions, and the applicable fees were paid to process the application.

The District has never estimated the fugitive emissions from the existing styrene unloading area. These emissions were never thought to be significant based on the vapor pressure of styrene and the fact that the unloading of styrene was abated by a vapor balance system (A-151). The vapor pressure of styrene is 0.09 psia and is less than 0.5 psia which is the threshold for a low vapor pressure organic liquid per Reg 8, Rule 6.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

Styrene does have a Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. The acute trigger level for styrene is 46 lb/hr, and the chronic trigger level is 35,000 lb/yr. There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-25 shall contine to comply with the Permit Condition No. 5377.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8 Rule 6 Terminals and Bulk Plants. The true vapor pressure of styrene at 25°C is 0.09 psia. The vapor pressure of the material is less than 0.5 psia, and this does not make the unloading operation subject to the requirements of Regulation 8 Rule 6. These standards under this rule require a vapor loss control system or a vapor balance for loading and unloading of materials with a vapor pressure of at least 1.5 psia. Even though styrenedoes not have a vapor pressure of at least 1.5 psia, the use of a vapor balance system (A-151) during styrene unloading operations meets the standards of this rule for higher vapor pressure materials.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8-18 Equipment Leaks. The installation of welded stainless steel lines for the styrene liquid line and the vapor balance should reduce leaks associated with styrene handling.

The requirements of Regulation 8 Rule 22 do not apply to this facility (8-22-115).

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 which states:

Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Existing Condition for S-25

```
COND#  5377    ---------------------------------------

     A/N 4451
     For S-25, Material Flow Tank, T-734:
     Conditions for A-151

     *1. The Vapor Balance System for styrene tank loading via
         rail car (A-151) shall be properly maintained and
         operated and shall abate S-25 during any styrene tank
         loading operation.
        (Basis: Voluntary Limit)

     2.  A-151, Vapor Balance System shall be properly maintained
         and operated and shall abate S-25 during loading of any
         organic liquids with vapor pressure greater than 0.5
         psia.
        (Basis: BAAQMD Regulation 8-5-301)
```

Existing Condition for S-209 (to remain in affect until S-209 is shutdown)

```
COND#  21059   ---------------------------------------

     Application 16468
     S-28, T-605B Material Flow
     S-36, N-Serve Plant Storage
     S-45, T-1 N-Serve
     S-56, T-31 N-Serve
     S-57, T-32 N-Serve
     S-61, T-780 N-Serve
     S-62, T-781 N-Serve
     S-63, T-782 N-Serve
     S-209, T-1 Latex Plant
     S-222, Latex Plant - Hydroxyethyl Acrylate Storage, T-112
     S-345, T-1 Vikane Plant - Storage Tank
     S-346, T-241
     S-372, T-20 Block 560 Storage Tank
```

S-382, N-Serve Unit Storage T-783
S-383, Petroleum Hydrocarbon Distillate Tank
S-407, T-728 N-Serve Formulation Tank
S-447, T-774
S-466, Plant 663 T-408A Intermediate Product Storage
S-467, Plant 663 T-408B Intermediate Product Storage
S-498, Sym Tet T-102 Storage Tank
S-625, T-610 Perc Expansion Tank

1. The following tanks may not store any liquid containing organic compounds with a vapor pressure greater than 0.5 psia: S-28, S-36, S-45, S-56, S-57, S-61, S-62, S-63, S - 209, S-222, S-345, S-346, S-372, S-382, S-383, S-407, S-447, S-466, S-467, S-498, S-625
(Basis: BAAQMD Regulation 2-1-301)

2. The owner/operator shall maintain records of the type, throughput, and vapor pressure of liquids stored. These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501)

Revised Condition after the Removal of S-209

COND# 21059 ----------

Application 16468
S-28, T-605B Material Flow
S-36, N-Serve Plant Storage
S-45, T-1 N-Serve
S-56, T-31 N-Serve
S-57, T-32 N-Serve
S-61, T-780 N-Serve
S-62, T-781 N-Serve
S-63, T-782 N-Serve
~~S-209, T-1 Latex Plant~~
S-222, Latex Plant - Hydroxyethyl Acrylate Storage, T-112
S-345, T-1 Vikane Plant - Storage Tank
S-346, T-241
S-372, T-20 Block 560 Storage Tank
S-382, N-Serve Unit Storage T-783
S-383, Petroleum Hydrocarbon Distillate Tank
S-407, T-728 N-Serve Formulation Tank
S-447, T-774
S-466, Plant 663 T-408A Intermediate Product Storage
S-467, Plant 663 T-408B Intermediate Product Storage
S-498, Sym Tet T-102 Storage Tank
S-625, T-610 Perc Expansion Tank

1. The following tanks may not store any liquid containing organic compounds with a vapor pressure greater than 0.5 psia: S-28, S-36, S-45, S-56, S-57, S-61, S-62, S-63, ~~S~~

- ~~209~~, S-222, S-345, S-346, S-372, S-382, S-383, S-407, S-447, S-466, S-467, S-498, S-625
(Basis: BAAQMD Regulation 2-1-301)

2. The owner/operator shall maintain records of the type, throughput, and vapor pressure of liquids stored. These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501)

RECOMMENDATION

I recommend approving the alteration of S-25 including the installation of a new styrene pump, utilizing the existing pump as a recirculation pump, and installing new piping to the latex plant. After the completion of this project S-209 will no longer be in service and may be archived. A pump will also be shutdown at S-209 and piping runs to the latex plant will be removed. Condition 21509 will need to be modified as shown above when S-209 is removed.

EXEMPTIONS

None.

By:_____ Date:_____

Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 16335

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-44 N-Serve plant chemical reactor, and S-446 Sym-Tet plant chemical reactor. Dow plans to replace four vapor scrubber process vessels T-90, T-91, T-94, and T-96, which are part of sources S-44 and S-446.

T-90 is a two-compartment vessel that stores sodium hydroxide process solution used in two venture scrubbers that process a vapor stream from S-44 and S-446. T-91 stores sodium hydroxide process solution for a process scrubber that abates tank T-90 and for a packed tower B-91 that processes vapor from Tank T-91 itself. T-94 is a decanter for the condensate from the pressure swing absorber vacuum pump and vents back to the pressure swing absorber vessels. T-96 receives liquid from T-94 and returns this process solution back to the pressure swing absorber as seal water for the pressure swing absorber liquid ring vacuum pumps. All of these vessels vent back to the process, the process air emissions are abated by existing abatement device A-89 that is a venturi scrubber at the N-Serve/Sym-Tet plant.

The process vessels are being replaced with identical reactors (that are being built to original specifications). Tank T-90 is 16 feet in diameter with a height of 12 feet. Tank T-91 is 16 feet in diameter with a height of 12 feet. Tank T-94 is 4 feet in diameter with a height of 9.75 feet. Tank T-96 is 5.54 feet in diameter with a height of 8.58 feet.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-44 and S-446 shall continue to comply with Permit Conditions No. 5385 and 21060.

S-44 and S-446 are also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2, Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an existing source and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

2-1-310 Applicability of CEQA: Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to Construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.
310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.
310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.
310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.
(Adopted 7/17/91; Amended 10/21/92)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply to this specific permit application.

PERMIT CONDITIONS

This application does not require modifying permit conditions.

RECOMMENDATION

Approve the alteration of the following equipment:

```
S-44  N-Serve Plant
       CHEM> Chemical reactor, greater than 1000 gallons

S-446  Sym-Tet Plant
       CHEM> Chemical reactor, greater than 1000 gallons, 7 days/wk
```

The specific alteration shall be the replacement of process vessels T-90, T-91, T-94, and T-96 with identical vessels that will not affect the air emissions from S-44 or S-446.

EXEMPTIONS

None.

By:_____ Date:_____

Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Road
Pittsburg, CA 94565
Plant Number 31
Application Number 16877

BACKGROUND

Dow Chemical Company has submitted an application for an Authority to Construct for the replacement of three of four existing reactors at the existing Source S-446 (Sym-Tet plant). Three 500-gallon reactors will be replaced with a larger 1,500-gallon reactor.

The three existing reactors (R-600A, 600C, and 600D) are in series with an existing 1,000-gallon reactor (R-600E). The new existing single replacement reactor (R600F) will have a capacity of 1,500 gallons and be in series with the existing 1,000-gallon reactor. The annual throughput of this plant will not increase. The single reactor will have fewer component parts and process connectors than the three existing reactors have in service.

Existing configuration

Sym-Tet Plant S-446
Four reactors (R-600A, 600C, 600D) with three reactors with each have 500 gallon capacity and a fourth reactor having 1000 gallon capacity, with all vapors vented to either S-389 process unit or to abatement devices, A-88/A89 or to an emergency abatement device A-168, B-609 (Emergency Packed Bed Tower Caustic Scrubber).

Proposed Process modification

Sym-Tet S-Plant, S-446
Existing reactor R-600E (1000 gallon capacity) and a new reactor R-600F (1,500 gallon capacity) that replaces three smaller existing reactors in series with vapors venting to S-389 or A-88/A-89 or A-168 (Emergency Backup Caustic Packed Tower Scrubber) or existing downstream process units

The handling of the vapors stream from reactors will not change. Vapor streams to downstream process units in S-446 will be abated by S-389 or by A-88/89 when S-389 in not in service. A-168 will continue to serve as an emergency abatement device for the Sym-Tet plant.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a large single reactor emission point) associated from the proposed configuration. The annual throughput remains the same.

Plant Cumulative Increase (tons/year)

There is no emissions increase associated with this application since there are no increases in annual throughput and no increase in fugitive emission points.

Pollutant	Existing	New	Total
POC	0.00	0.00	0.00

Toxic Risk Screening

It is expected that there are no increase in toxic air contaminant emissions associated with the proposed modification. This application does not require a Risk Screening Analysis under Regulation 2, Rule 5.

STATEMENT OF COMPLIANCE

Dow Chemical will continue to comply with Permit Condition Numbers 5385 and 21060.

Source S-446 are expected to maintain compliance and meet all emission limits with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2 and Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-312,**Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the

project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;

11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's preliminary health risk screening analysis shows that a formal health risk assessment is not required, and for which there will be no other significant environmental effect.

The project is not located within 1000 feet from any school and is not subject to the public notification requirements of Regulation 2-1-412.

Best Available Control Technology (BACT)

This project does not trigger BACT because there are no expected emission increases from this project.

Offset: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/year of POC or NOx. There is no emissions increase associated with this application, therefore offsets are not required for this project.

PSD, NSPS, and NESHAPs do not apply to this specific project.

PERMIT CONDITIONS

The Sym-Tet plant will still be subject to the following conditions.

```
COND#  5385    --------------------------------------

     Applications 5926, 8548
     For S-446, Sym-Tet Plant:
     Conditions for A-168, B-609 Emergency Backup Caustic
     Scrubber:

     1.  The Emergency Backup Caustic Scrubber B-609 (A-168)
         shall be properly operated and properly maintained and
         shall abate S-446 during all times that the reactor and
         stripping systems in the 2,3 penta section of the Sym-
         Tet Plant (S-446) are operating.
        (Basis: BAAQMD Regulation 6, BAAQMD Regulation 8-2-
```

```
        301/BAAQMD 2-1-403)


COND#  21060   --------------------------------------

     Application 16468
     Facility-wide Condition applying to process vessels subject
     to Regulation 8, Rule 10

     1.  Effective 60 days after the issuance of the Major
         Facility Review Permit: Until Regulation 8, Rule 10 is
         revised to include compliance monitoring measures for
         chemical plants, the operator shall maintain records of
         the following for each process unit turnaround:
         a.  The date of unit shutdown and/or depressurizing;
         b.  The approximate process vessel hydrocarbon
             concentration when the organic emissions were first
             discharged to the atmosphere; and
         c.  The approximate quantity of total precursor organic
             compounds emitted into the atmosphere.
         These records shall be kept on site for a minimum of
         five years from the date of entry and shall be made
         available to District personnel upon request.
        (Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 8 -
        10-301)
```

RECOMMENDATION

It is recommended that the District approve the replacement of three reactors with a larger 1500-gallon capacity reactor. The specific change will replace three process vessels, R-600A, R-600C and R-600D with a larger reactor with equal capacity.

S-446, Sym-Tet Plant

Existing reactor R-600E (1000 gallon capacity) remain in place and three existing reactors will be replaced with a new reactor, R-600F (having a 1,500 gallon capacity) and vapors venting to S-389 or A-88/A-89 or A-168 (Emergency Backup Caustic Packed Tower Scrubber) or existing downstream process units.

EXEMPTIONS

None

By:_____ Date_____

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 16988

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of Abatement Device A-85 acid absorber (packed bed scrubber). This fiberglass scrubber absorbs anhydrous HCl from the vapor phase into the water to produce 36% aqueous HCL. A-85 abates S-434 and S-576 and is downstream of A-87. The exhaust of A-85 is sent to A-199 and is eventually discharged at P-95.

The existing A-85 fiberglass scrubber is being replaced by an identical unit since the flange on the existing scrubber is damaged. The altered A-85 is identical to the existing scrubber. There is no change in process parameters or emissions due to the installation of this altered scrubber A-85. The work is scheduled to be completed some time in March of 2008.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-434 Manufacturing Services Facility shall continue to comply with Permit Conditions No. 17985 and No. 21060.

The owner/operator of S-576 36% HCL Storage Tank shall continue to comply with Condition No. 17985.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

2-1-310 Applicability of CEQA: Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.
310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.
310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.
310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.
(Adopted 7/17/91; Amended 10/21/92)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

This application does not require modifying permit conditions.

RECOMMENDATION

Approve the alteration of the following equipment:

A-85 B-102 Absorber
Packed Bed Scrubber
train: ,A87,/,A199,

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 17600

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-449 Hydrochloric Acid Storage Tank vent. The vent is currently abated by Absorbers A-90 and A-91 exhausted to P-188. Dow plants to route the exhaust from S-449 to A-101 Falling Film Absorber and A-102 Scrubber which is exhausted to P-199.

Dow is rerouting the tank exhaust from S-449 since the Vikane plant has been shutdown. Dow has requested that sources S-454 Vikane Plant, S-345 Perchloroethylene Storage Tank be archived. Dow also requests that A-197, A-46, A-90 and A-91 associated with S-454 also be archived.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-449 Hydrochloric Acid Storage Tank shall continue to comply with Permit Conditions No. 18128.

The project is exempt from CEQA in accordance with Regulation 2-1-312.11.1 since it is an alteration of S-449 exhaust to A-101 and A-102 and is not a new or modified source requiring an Authority to Construct. In addition, there is no emissions increase associated with this project.

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-

312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.
312.2 Permit applications to install air pollution control or abatement equipment.
312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.
312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.
312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.
312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.
312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.
Bay Area Air Quality Management District July 19, 2006
2-1-24
312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.
312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.
312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.
312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:
11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;
11.2 A proposed new source or stationary source for which full offsets are

provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;
11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;
11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10-6) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Existing condition No. 18128 which applies to S-449.

```
COND#  18128   ---------------------------------------

     Applications 30453, 681, 6955, 19565, 2047, 7475, 16468,
     8894
     Conditions for the Vikane Plant including:
     S-454, Vikane Plant;
     S-449, Hydrochloric Acid Storage Tank, T-30;
     S-268, Fumigants Closed Press. Storage Tank T-4 (exempt);
     S-269, Fumigants Closed Press. Storage Tank T-5 (exempt);
     A-90, H-30 Acid Absorber;
     A-91, B-30 Absorber;
     A-46, B-7 Caustic Scrubber; and
     A-197, B-4 Caustic Scrubber

     1.  Abated particulate emissions, including emissions of
         hydrochloric acid, hydrofluoric acid, and sulfuryl
```

fluoride, from S-454 (P-127 and P-128 combined) shall not exceed 718.8 pounds and sulfur dioxide emissions from S-454 shall not exceed 10.4 pounds in any consecutive 12-month period.
(Basis: Cumulative Increase)

2. Abated particulate emissions, including emissions of hydrochloric acid, hydrofluoric acid, and sulfuryl fluoride, from S-454 (P-127 and P-128 combined) shall not exceed 2.5 pounds and sulfur dioxide emissions from S-454 shall not exceed 0.04 pounds in any day.
(Basis: BAAQMD Regulation 2-1-301)

3. Abated hydrochloric acid emissions from S-449 (P-188) shall not exceed 68 pounds in any consecutive 12-month period.
(Basis: Cumulative Increase)

4. Abated hydrochloric acid emissions from S-449 (P-188) shall not exceed 0.3 pounds in any day.
(Basis: BAAQMD Regulation 2-1-301)

5. Emissions from the S-454 Vikane Plant shall be vented to the A-90 Acid Absorber and A-91 Acid Absorber (in series) during all hours of operation, except as described below in Part 6.
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

6. Emissions from S-454 shall be vented to either
   a. the A-46 Caustic Scrubber, or
   b. the A-197 Caustic Scrubber, or
   c. the S-434 Manufacturing Services Facility and A-199 Manufacturing Services Scrubber B-12 in series, or
   d. the A-87 HCl Absorber H-109 and A-85 Absorber B-102 andA-199 in series,

during any time that emissions are not vented to A-90 and A-91. Emissions from S-454 may be vented to any of the abatement trains above during start-up or shut-down of the reactors, during maintenance, or during upset conditions.
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

7. Emissions from the S-449 Hydrochloric Acid Storage Tank shall be vented to the A-91 Acid Absorber, whenever S-449 is storing hydrochloric acid.
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

8. The A-90 and A-91 Acid Adsorbers shall achieve a combined removal efficiency of 99.99 percent by weight

of the hydrogen chloride (HCl) emissions vented to A-90, or A-91 shall emit no more than 0.068 pounds/hour (477 grains/hour) of HCl (including all HCl from any hydrochloric acid mist emissions).
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

9. The Permit Holder shall demonstrate compliance with Part 8 by maintaining the bottom temperature of B-30 (A-91) to no greater than 80 degrees C. In no event shall the average temperature exceed 80 degrees C during any consecutive 24-hour period. The Permit Holder shall measure the temperature at the bottom of B-30 and calculate a rolling 24-hour average temperature each hour to demonstrate compliance with this requirement.
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

10. The A-46 and A-197 Caustic Scrubbers shall each achieve either the minimum removal efficiencies (percent by weight) or maximum emission rates identified in subparts a.-d. below.
    a. For hydrogen chloride and hydrochloric acid mist, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.0023 pounds/hour of HCl.
    b. For hydrogen fluoride and hydrofluoric acid mist, A-46 and A-197 shall each achieve either 97 percent control by weight or shall each emit no more than 0.59 pounds/hour of HF.
    c. For all other acid gases and acid mists, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.025 pounds/hour of acid gas.
    d. For sulfur dioxide, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.61 pounds/hour of SO2.
(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

11. The Permit Holder shall demonstrate compliance with Part 10 above by using a caustic scrubbing solution in A-46 and A-197 with a minimum hydroxide (OH-) concentration of 2 percent by weight from either sodium hydroxide (NaOH) or potassium hydroxide (KOH). To demonstrate compliance with this requirement, the Permit Holder shall collect a sample of scrubbing solution used at A-46 and A-197 once per day and shall analyze the sample for pH and weight percent of NaOH or KOH.
(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

12. In order to demonstrate compliance with Parts 1-11 above, the Permit Holder shall maintain the following records:
    a. Daily records of operating time for the Vikane Plant (S-454).
    b. Hourly records of the temperature at the bottom of B30 (A-91) and the rolling 24 hour averages.
    c. Daily records of the pH and hydroxide concentration in the scrubbing solution for the A-46/A-197 Caustic Scrubbers.
    d. Daily records of the amount of Vikane produced at S-454, totaled each month.
    e. Monthly records of the throughput rate for hydrochloric acid (expressed as 36% HCl) at S-449.
    f. Monthly and daily records of particulate emissions (HCl, HF, and sulfuryl fluoride) and SO2 emissions from S-454 for the previous 12-month period.
    g. Monthly and daily records of hydrochloric acid emissions from S-449 for the previous 12-month period.

    These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request. (Basis: Cumulative Increase, TRMP, BAAQMD Regulation 2-6-501, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

Revised Condition No. 18128 (S-449 now routed to A-101 and A-102, Vikane Plant Shutdown).

COND# 18128 ----------

Applications 17600
S-449, Hydrochloric Acid Storage Tank, T-30;

1. The owner/operatior of S-449 (P-188) shall ensure abated hydrochloric acid emissions shall not exceed 68 pounds in any consecutive 12-month period.
(Basis: Cumulative Increase)

2. The owner/operator of S-449 (P-188) shall ensure abated hydrochloric acid emissions shall not exceed 0.3 pounds in any day.
(Basis: BAAQMD Regulation 2-1-301)

3. The owner operator of S-449 Hydrochloric Acid Storage Tank shall ensure the tank exhaust is vented to the A-101 Falling Film Absorber and A-102 Acid Scrubber, whenever S-449 is storing hydrochloric acid. (Basis: Cumulative Increase, Regulation 2, Rule 5, and Regulation 6-310/Regulation 2-1-403)

4. In order to demonstrate compliance with Parts 1-11 above, the owner/operator shall maintain the following records:
    a. Monthly records of the throughput rate for

```
     hydrochloric acid (expressed as 36% HCl) at S-449.
 b.  Monthly and daily records of hydrochloric acid
     emissions from S-449 for the previous 12-month
     period.
These records shall be kept on site for a minimum of
five years from the date of entry and shall be made
available to District personnel upon request.
(Basis: Cumulative Increase, TRMP, BAAQMD Regulation 2-6-
501, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-
302)
```

RECOMMENDATION

Approve the alteration of the following equipment:

S-449 Hydrochloric Acid Tank exhaust routed to A-101 Falling Film Absorber and A-102 Scrubber which is exhausted to P-199.

Approve the revision of Condition No. 18128 to reflect the rerouting of the tank exhaust from S-449 and the shutdown of the Vikane Plant (S-454).

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburg, CA 94565
Plant No. 31
Application No. 17940

BACKGROUND

Dow Chemical Company (Dow) has applied for a Change of Conditions for their Pittsburg facility. Dow proposes adding a plant wide condition that would limit emissions of Hazardous Air Pollutants (HAP per the Clean Air Act) from the facility to less than 10 tons/year of any single HAP and less than 25 tons/year of aggregate HAP. The 10/25 ton thresholds define a major source of HAP under the clean air act.

The new plant wide condition would make the facility a minor source of HAP under the Clean Air Act. The facility plans to submit quarterly emissions estimates to demonstate compliance with the new permit limit. All emissions estimates would need to be prepared using District approved methodology.

The facility hired a consultant to prepare actual HAP emissions estimates for 2004, 2005, and 2006. The emissions estimates were based on previously prepared emission calculations for the facility which are documented in onsite binders. Each emission calculation has been documented and based on District review appeared to use a conservative methodology to estimate emissions.

Dow has also agreed to make the permit limit less than the 10/25 ton/year major source thresholds. Dow will limit HAP emissions to less than 9 tons/year for any single HAP and 23 tons/year for aggregate HAP.

Total HAP emissions were 14 tons/year in 2004, 11 tons/year in 2005, and 16 tons/year in 2006. Dow also multiplied the fugitive estimate by 1.5 to ensure that fugitive emissions would not cause the facility to exceed the new permit limits in the future.

The emissions estimates indicate that methylene chloride from S-302 Fungicides Prodruct Dryer and Collector Tank and S-303 Fungicide Product Dryer and Collector had total emissions of 9,890 lb/year in 2006. The emissions estimates also indicate that Fugitive emissions of carbon tetrachloride were 5330.97 lb/year in 2004. These two HAPs had the largest annual emissions from the facility during 2004, 2005, and 2006. The emissions of any single HAP did not approach the 10 tons/year major source threshold or the proposed 9 ton/year permit limit.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of Dow Chemical plant in Pittsburg, CA shall continue to comply with all air Permit Conditions.

This application is exempt from CEQA per 2-1-312.1.

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.
312.2 Permit applications to install air pollution control or abatement equipment.
312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.
312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.
312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.
312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.
312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.
Bay Area Air Quality Management District July 19, 2006
2-1-24
312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.

312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.
312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.
312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:
11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;
11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;
11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;
11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff’s health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10^{-6}) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Dow Chemical, Plant #31,

The following conditions establish the federally enforceable permit terms that ensure this plant is classified as a Minor source of Hazardous Air Pollutants under District Regulation 2, Rule 6, Major Facility Review. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the minor HAP permit must be evaluated to ensure that the facility will not exceed the HAP minor general limits below, and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a HAP Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a HAP minor, must undergo the procedures pursuant to Regulation 2, Rule 6, section 423. The basis for the HAP minor conditions is an emission limit for a single hazardous air pollutant of less than 9 tons per year, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year.

1. The owner/operator of Dow Chemical Pittsburg facility shall not emit more than 9 tons of any single hazardous air pollutant (HAP) or 23 tons of any combination of HAPs in any consecutive 12-month period. (basis: Clean Air Act, Section 112, District Regulation 2, Rule 6)

2. The owner/operator of Dow Chemical Pittsburg facility shall maintain quarterly emission estimates to demonstrate compliance with this condition. The owner/operator shall prepare all emission estimates using District approved calculations. Emission estimates for each calendar quarter shall be prepared by the owner/operator of Dow Chemical Pittsburgh facility within 30 days from the end of the calendar quarter. Emission estimates shall be submitted to the District upon request. The owner/operator shall notify the District immediately if emission estimates indicate Part 1 of this condition has been exceeded during any consecutive 12 month period.

RECOMMENDATION

Approve the change of conditions for the Dow Chemical Pittsburg CA facility.

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 18563

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an Oxidation Catalyst (A-205) to abate S-389 Halogenated Acid Furnace: Sym-Tet Thermal Oxidizer, R-501, Incinerator - Single Chamber, 3MM BTU/hr max, Multifuel.

S-389 is currently abated by A-94 Acid Absorber, A-74 Caustic Scrubber, A-75 Particulate Scrubber, two Carbon Beds in parallel (A-76, A-80), and A-77 Non-Selective Catalytic Reduction.

A-205 Oxidation Catalyst would be installed after A-77 and just prior to the stream being exhausted to atmosphere.

S-389 has a bypass stack that bypasses the two Carbon Beds in parallel (A-76, A-80), A-77 Non Selective Catalytic Reduction and the new A-205 Oxidation Catalyst. This bypass is used when the Non Selective Catalytic Reduction unit is undergoing periodic maintenance. The NOx emissions are limited to 6,194 lb/year in Part 10 of Condition 2039.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-389 shall continue to comply with the applicable portions of Permit Conditions No. 1748, 1785, 2039, 5722, 11276, 14438, 14722, 16610 and 24004.

S-389 is also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, and Regulation 8-2, and Regulation 9-1. S-389 is also expected to remain in compliance with 40 CFR Part 63 Subpart EEE requirements (Hazardous Waste Combustor MACT), and other 40 CFR Part 63 requirements as applicable.

The project is exempt from CEQA in accordance with Regulation 2-1-312.2 since it is the installation of a new abatement device on an existing source. Regulation 2, Rule 1-312 states:

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express

terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.
312.2 Permit applications to install air pollution control or abatement equipment.
312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.
312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.
312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.
312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.
312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.
Bay Area Air Quality Management District July 19, 2006
2-1-24
312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.
312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.
312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.
312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:
11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;
11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;
11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;
11.4 Projects satisfying the "no net emission increase" provisions of District

Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10_{-6}) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, and NSPS do not apply to this specific permit application. NESHAPs 40 CFR 63 requirements still apply to S-389. Adding A-205 Oxidation Catalyst is not expcected to change the compliance status of S-389 with any applicable 40 CFR Part 63 requirements.

PERMIT CONDITIONS

COND# 2039 ----------

Applications 26939, 726, 12387, 16468, 18563
For S-389, Sym-Tet Thermal Oxidizer, R-501:
A-74, B-502 Caustic Scrubber
A-75, X-505 Particulate Scrubber
A-76, B-503A Carbon Adsorber
A-77, R-502 Nonselective Catalytic Reduction Unit
A-80, B-503B Carbon Adsorber
A-94, B-501 Acid Absorber
A-205, R-503 Carbon Monoxide Scrubber

1. The S-389 Sym-Tet Thermal Oxidizer, R-501 combustion chamber shall operate at a minimum of 1000 degrees C (1830 degrees F) at all times that chlorinated liquids and/or gases are being burned.
   (Basis: Cumulative Increase, BACT)

2. S-389 shall operate with a minimum gas residence time of 0.9 seconds in the combustion chamber at all times that chlorinated liquids and/or gases are being burned.
   (Basis:Cumulative Increase, BACT)

3. S-389 shall be abated by A-94 Acid Absorber and A-74 Caustic Scrubber at all times that S-389 is operating. S-389 shall be abated by A-75 Particulate Scrubber at all times that S-389 is burning chlorinated hydrocarbon liquid.
   (Basis: Cumulative Increase, BACT, BAAQMD Regulation 6)

4. Carbon Monoxide (CO) emissions from S-389 shall not exceed 250 ppm at 3% oxygen ~~(upstream of all abatement equipment)~~.
   (Basis: Cumulative Increase, BACT)

5. S-389 shall achieve a minimum organic Destruction Removal Efficiency of 99.99% (wt) for each POHC in the feed at all times.
   (Basis: Cumulative Increase)

6. Deleted.

7. Annual average liquid feed throughput for S-389 shall not exceed 45.1 gal/hr.
   (Basis: Cumulative Increase)

8. Maximum daily liquid feed throughput for S-389 shall not exceed 70 gal/hr.
   (Basis: Cumulative Increase, BACT)

9. The owner/operator of S-389 shall conduct a District approved source test every 6 months demonstrate compliance with the CO limit in Part 4 and to determine NOx emission rates in each of the following operating modes (each liquid feed mode shall be tested at the nominal rate of 18-22 gallons/hour and at the maximum achievable rate, which shall not exceed 70 gallons/hour; all vent feed modes shall be tested at maximum venting rates): a. Reactor startup on methane firing only, no NSCR (A-77) abatement. b. Process vents and methane feed, no NSCR (A-77) abatement. c. Process vents, chlorinated hydrocarbon liquid, and methane feed, no NSCR (A-77) abatement. d. Process vents, chlorinated hydrocarbon liquid, and methane feed with NSCR (A-77) abatement. e. Process vents and methane feed with NSCR (A-77) abatement.
   The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing.
   (Basis: Cumulative Increase, BACT)

10. NOx emissions from S-389 shall not exceed 6194 pounds/yr. The owner operator of S-389 shall submit the source test results for CO and a total NOx emission calculation based on the source test data from Part #9. The results of this source test and the corresponding emission calculations shall be summarized in a District approved format and submitted to the District's Engineering Division within 30 days of source test completion.
   (Basis: Cumulative Increase, BACT)

11. Carbon Adsorbers B-503 A and B (A-76 and A-80)<u>, and Oxidation Catalyst (A-205)</u> shall operate at all times that the R-502 NSCR Unit (A-77) is operating <u>except during 30 minute startup periods and 30 minute shutdown periods</u>.
   (Basis: Cumulative Increase, BACT)

12. Deleted.

13. The owner/operator of S-389 shall install District approved continuous monitors and recorders to measure the following: a. Chlorinated hydrocarbon liquid feed rate. b. S-389 O2 emission rate. c. S-389 combustion chamber temperature. d. A-77 NSCR Unit bypassing incidents and duration.
   (Basis: Cumulative Increase, BACT)

14. The stack height of the NSCR Unit A-77 Main Stack (P-1) shall be at least 45 ft above grade. The stack height of the A-77 Bypass Stack (P-8) shall be at least 35 ft above grade. (Basis: TRMP)

15. The owner/operator of S-389 shall maintain appropriate records to determine compliance with all Permit Conditions. These records shall be kept for a minimum of five years from the date of last entry and shall be made available to District personnel upon request. (Basis:Cumulative Increase, BACT, BAAQMD Regulation 2-6-501)

RECOMMENDATION

Approve the Authority to Construct of the following equipment:

A-205 Oxidation Catalyst

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 18690

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-434 Manufacturing Services Facility. Dow plans on replacing process vessel T-9 with a new process vessel of simular size.

The existing T-9 (part of S-434) is a rubber lined steel vessel rated for 75 psig and 150 deg. F service. The new T-9 will be a fiberglass reinforced plastic that is rated for 15 psig and 140 deg. F service. The materials are being changed due to corrosion of the existing process vessel. Pressure relief devices will remain set at 15 psig. The existing tank volume was 3,252 gallons and the new tank volume will be 2,974 gallons.

T-9 vents to A-87 HCL Absorber/Heat Exchanger which is followed by A-199 Packed Bed Scrubber. There is no emissions increase associated with changing out process vessel T-9.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-434 shall continue to comply with Permit Conditions No. 17985, 21060 and 24004.

S-434 are also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, and Regulation 8-2, and Regulation 8-10. S-434 is also expected to remain in compliance with 40 CFR 63 Subpart NNNNN requirements (NESHAPs for Hydrochloric Acid Production).

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an existing source and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

2-1-310 Applicability of CEQA: Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to Construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.
310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.
310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.
310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.
(Adopted 7/17/91; Amended 10/21/92)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, and NSPS do not apply to this specific permit application. NESHAPs 40 CFR 63 Subpart NNNNN requirements still apply to S-434. Replacing process vessel T-9 is not expcected to change the compliance status of S-434 with Subpart NNNNN requirements.

PERMIT CONDITIONS

This application does not require modifying permit conditions.

RECOMMENDATION

Approve the alteration of the following equipment:

Replacement of process vessel T-9 at S-434.

```
434  Manufacturing Services Facility
       CHEM> Distillation, Fully halogenated hydrocarbons, 7 days/wk
          G7037211            /,A336,A87,A199,
```

EXEMPTIONS

None.

By:_____ Date:_____

Brian Lusher
Air Quality Engineer II

Evaluation Report
A/N 19565
G# 6131 (Plant 31, Source 174)
Dow Chemical, 901 Loveridge Rd., Pittsburg

Background

Dow Chemical has applied for an A/C to remove the Phase II equipment from their existing gasoline dispensing facility under the low throughput exemption of Section 8-7-112.5. No other work is proposed under this application.

Dow Chemical currently operates a 10,000 gallon underground gasoline tank with two EW A4005 gasoline nozzles equipped with OPW EVR two-point Phase I and balance Phase II vapor recovery equipment. This equipment is permitted as Source 174 at Plant 31 and is subject to condition #14098, which limits annual gasoline throughput to 940,000 gallons per year and #20666 for the OPW EVR Phase I system.

Dow Chemical is proposing to replace the vapor recovery nozzle and hose with conventional (i.e., non-vapor recovery) models and cap off the vapor return piping. All other equipment will remain unchanged. Once this project is completed, Dow will be exempt from Phase II vapor recovery requirements. They will not be subject to the April 1, 2009 for installing EVR-certified Phase II vapor recovery equipment.

Emissions

The fleet refueled at this facility consists primarily of non-ORVR equipped vehicles. Removing the Phase II vapor recovery will result in an emissions increase.

Dow was originally assigned the 940,000 gal/yr limit under A/N 487. Actual reported throughput at the time was 20,400 gal/yr, and no offsets were provided for the increase. Accordingly, 20,400 gal/yr will be used as the baseline for calculating emission increases from this source.

Emission factors from the CAPCOA Industry-Wide Risk Assessment:

Phase I w/vent valves:	9.3# VOC/Mgal
Phase I, Phase II, vent valves	1.27 #VOC/Mgal

The baseline emissions for this source are based on 20,400 gal/yr with Phase I and Phase II controls. Dow has requested a condition of 20,000 gal/yr upon removal of the Phase II equipment. This will result in the following emissions increase:

(20 Mgal/yr) (9.3 #/Mgal) - (20.4 Mgal/yr) (1.27 #/Mgal)

= 160 # VOC/yr increase

New Source Review

The emissions increase from this project is less than 10 # VOC/day. Per Section 2-2-301, BACT is not required for this project.

Dow has a cumulative increase > 35 tpy POC. Per Section 2-2-302, they are required to provide emissions offsets for any increase at a 1.15:1 ratio.

Required offsets: (160 # VOC) (1.15) = 184 # VOC offsets

In a letter dated February 27, 2009, USS POSCO authorized the District to deduct 0.092 tons (184#) of POC emission reduction credits from Banking Certificate #946.

Statement of Compliance

Dow has submitted data demonstrating that this storage tank was installed prior to March 4, 1987, agreed to accept a condition limiting throughput to less than 60,000 gal/yr, and accept conditions on their A/C to remove the Phase II vapor recovery equipment to the APCO's satisfaction. This satisfies the requirements of Section 8-7-112.7.

Permit Conditions

Authority to Construct Conditions:

Cond #24279

1. All vapor-recovery nozzles, breakaways and hoses shall removed and replaced with conventional (non-vapor recovery) equivalents.
2. Vapor adaptors shall be removed from all dispensers.
3. All vapor recovery piping (including internal dispenser piping) shall be either removed or capped with NPT galvanized pipe.
4. Within ten(10) days of start-up, a Leak Test shall be performed on the tanks in accordance with the District's Manual of Procedures Source Test Procedure ST-30. If the tank size is 500 gallons or less, the test shall be performed on an empty tank.
5. The applicant shall notify Source Test by email at gdfnotice@baaqmd.gov or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted in a District-approved format within thirty days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email (gdfresults@baaqmd.gov), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

Permit to Operate Conditions

COND# 24289 ----------

This facility's annual gasoline throughput shall not exceed 20,000 gallons in any consecutive 12 month period. (Basis: Voluntary Limit)

COND# 20666 ----------

1. The OPW EVR Phase I Vapor Recovery System, including all associated plumbing and components, shall be operated and maintained in accordance with the most recent version of California Air Resources Board (CARB) Executive Order VR-102. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board. (District Regulation 8-7-301.2)

2. The owner or operator shall conduct and pass a Rotatable Adaptor Torque Test (CARB Test Procedure TP201.1B) and either a Drop Tube/Drain Valve Assembly Leak Test (TP201.1C) or, if operating drop tube overfill prevention devices ("flapper valves"), a Drop Tube Overfill Prevention Device and Spill Container Drain Valve Leak Test (TP201.1D) at least once in each 36- month period. Measured leak rates of each component shall not exceed the levels specified in VR-102. Results shall be submitted to BAAQMD within 15 days of the test date in a District-approved format. (District Regulation 8-7-301.2)

Title V Permit Revisions

This plant has a Title V permit. This project will require a minor revision of the Title V permit. The BAAQMD plant engineer for Chevron has been advised of the need for amendments to the Title V permit.

Proposed revisions to the Title V permit are attached.

Recommendation

All fees have been paid. Recommend that an A/C be issued for the above project.

By _____ date_____

Scott Owen
Supervising AQ Engineer

Table IV-P
Source-specific Applicable Requirements
S-174, Gasoline Dispensing Facility

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 8, Rule 7	**Organic Compounds – Gasoline Dispensing Facilities (11/6/2002)**		
8-7-301	Phase I Requirements	Y	
8-7-303	Topping Off	Y	
8-7-304	Certification Requirements	Y	
8-7-308	Operating Practices	Y	
8-7-315	Pressure Vacuum Valve Requirements, Underground Tanks	Y	
8-7-407	Periodic Testing Requirements	Y	
8-7-408	Periodic Testing Notification and Submission Requirements	Y	
8-7-502	Right of Access	Y	
8-7-503	Recordkeeping Requirements	Y	
BAAQMD Condition # 24289			
Part 1	Maximum Annual Gasoline Throughput (TRMP)	N	

Table VII-N
Applicable Limits and Compliance Monitoring Requirements
S-174, Gasoline Dispensing Facility

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VOC	BAAQMD Regulation 8-7-301.10	Y		98% or highest CARB vapor recovery rate	None	N	N/A
VOC	Condition 24289, Part 1	N		20,000 gallons/12 months	BAAQMD 8-7-503.1	P-M	Records
VOC	Condition #20666, Part 2	Y		Avergage Static Torque to not exceed 108 pound-inch measured per CARB TP-201.1B	CARB Executive Order VR-102	P 3A	N/A
VOC	Condition #20666, Part 2	Y		Drop Tube Overfill Prevention Device Leak Rate not to exceed 0.17 CFH measured per CARB TP201.1D	CARB Executive Order VR-102	P 3A	N/A
VOC	BAAQMD Regulation 8-7-301.13	Y		Comply with vapor tighness by passing a test per District Source Test Procedure ST-30 or CARB TP-201.3			

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 20156

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of A-192 Dowicil Solvent Recovery System. Dow plans on replacing process vessel T-220 with a new process vessel of similar size. The existing tank is stainless steel the new tank will be carbon steel. The existing tank has a length of 6' and an internal diameter of 4' with a capacity of 690 gallons. The new tank will have the same capacity and interior dimensions, but will be ½" thick.

There will be no change in operations due to the installation of the new tank. Material is transferred from a distillation column B-200 to T-220. T-220 vents to the solvent recovery system and the liquids are transferred to S-336 the thermal oxidizer in the Manufacturing Services facility.

EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of A-192 shall continue to comply with Permit Condition No. 14438. A-192 abates S-302 Dowicil Train 1, S-303 Dowicil Train 2, and three Storage Tanks S-662, S-663, and S-664.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

2-1-310 Applicability of CEQA: Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the

requirements of CEQA.
310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.
310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.
310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.
(Adopted 7/17/91; Amended 10/21/92)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

PSD, NSPS and NESHAPs do not apply to this specific permit application.

PERMIT CONDITIONS

This application does not require modifying permit conditions.

RECOMMENDATION

Approve the alteration of the following equipment:

Replacement of process vessel T-220 at A-192.

```
192  Vent Recovery System
       Compression/Refrigeration Vapor Recovery
          train: ,S302,S303,S662,S663,S664,/,A389,P218,
```

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Air Quality Engineer II

Addendum to Engineering Evaluation
November 15, 2010
Dow Chemical Company
901 Loveridge Rd
Pittsburg, CA 94565
Plant No. 31
Application No. 21795

Dow Chemical Company revised the fugitive component count for the project as shown below. This document is an addendum to the engineering evaluation originally prepared for the project.

The Dow Chemical Company has applied for an Authority to Construct for a new carbon tetrachloride loading rack. The equipment has the following description:

S-483 Carbon Tetrachloride Rail Car Loading Rack

The new loading rack will be abated by a vapor balance system that sends the collected emissions to either the Symtet Halogen Acid Furnace S-389 or the Manufacturing Services Halgen Acid Furnace S-336. Dow also has an existing S-482 Carbon Tetrachloride Rail Car Loading rack.

The fugitive component counts for the project are contained in the following Table.

Component	**Original Project Estimate**	**Final Project Estimate**
Valves	5	7
Connections (Flanges)	14	20

Dow is installing BACT components for the fugitive components in use at the carbon tetrachloride loading rack. The District originally estimated emissions of carbon tetrachloride assuming two leaking connectors at 998.973 lb/year. This emissions value corresponded to a cancer risk of 1.5 in a million. Dow agreed to limit the project risk to one in a million. The corresponding fugitive limit was 669.35 lb/year

The total carbon tetrachloride emissions for the project are 670 lb/year + 3.59 lb/year = 673.59 lb/year. The corresponding fugitive emissions of carbon tetrachloride would be limited to 669.35 lb/year (670 lb/year – 0.353 lb/year – 0.3 lb/year). The fugitive emissions estimate demonstrates compliance with this limit when the number of leaking connectors is reduced from two to one. The fugitive emissions estimate for the project with the revised component counts would be reduced to 528.14 lb/year assuming one leaking connector. The permit limit will be set at 669.35 lb/year for the fugitive emissions to allow for some compliance margin.

For the carbon tetrachloride loading rack the final fugitives emissions estimate assuming one leaking connector with the final component counts was calculated as follows.

Dow Chemical Company Plant No. 31
Application No. 21795
BAAQMD Corrected Fugitives, November 2010

Basis	% of Year	Valves	Connectors	Leaker	Valve EF (lb/year)	Connector EF (lb/year)	Leaker EF (lb/year)	Emissions (lb/year)
Loading filled with liquid	6	7	20	0	2.0736	2.916	NA	4.37
Filled when not loading	94	4	10	1	2.0736	2.916	517.668	521.82
Empty when not loading	94	3	10	0	0.20736	0.1458	NA	1.96
Total								528.14

Dow data for maximum leaking connector is 517.668 lb/year from the Manufacturing Services Plant Block 520.
Dow and BAAQMD agreed that the final permit limit should be developed assuming a maximum leak rate for one leaking connectors at 1 x 517.668 lb/year = 517.66
This approach will ensure that Dow will meet the permit limit in the future, offsets provided will be adequate, and that the health risk screening analysis will be conservative.

Sample Calculation
POC lb/year = (% of year operated)x(component specific emission factor)x(# of connectors)

The revised fugitive component count does not change any of the analysis contained in the engineering evaluation. The revised component count has been incorporated into Condition No. 24779 Part 1.

PERMIT CONDITIONS

```
COND#  24779   ---------------------------------------

     Plant 31
     S-483 Carbon Tetrachloride Loading

     1.  Within 30 days of District's issuance of the Permit to
         Operate for S-483, the Owner/Operator shall provide the
         District's Engineering Division with a final count of
         all fugitive components and each component's unique
         permanent identification codes in this project. The
         owner/operator has been permitted to install the
         following fugitive components that shall be required to
         meet current District BACT guidelines at the time of
         installation:

        7 valves in organic service;
        20 connectors in organic service;

        [Basis: Cumulative Increase, offsets, Regulation 2-5]

     2.  The Owner/Operator shall comply with a leak standard of
         100 ppm of TOC (measured as C1) at any valves installed
         at S-483 in organic service unless the Owner/Operator
         complies with the applicable minimization and repair
         provisions contained in Regulation 8-18. [Basis:
        Regulation 8 Rule 18]

     3.  The Owner/Operator shall comply with a leak standard of
         100 ppm of TOC (measured as C1) at any flanges and/or
         connectors installed at S-483 in organic service unless
```

the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.
[Basis: Regulation 8 Rule 18]

4. The Owner/Operator shall conduct inspections of fugitive components installed at S-483 in organic service in accordance with the frequency below:

Valves: Quarterly
Connectors (Not Flanges): Biannual
Flanges: Biannual

[Basis: Cumulative Increase, Regulation 8 Rule 18, Regulation 2 Rule 5]

5. The Owner/Operator shall not exceed 0.335 tons of POC emissions per consecutive 12 month period measured as C1 from for all fugitive components installed at S-483 in organic service. Compliance with this provision shall be verified quarterly using methods described in part 6.
[Basis: Cumulative Increase, offsets]

6. If all of the fugitive components installed at S-483 in organic service are leaking at a rate less than 5000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed at S-483 in organic service are leaking at a rate equal to or greater than 5,000 ppm of TOC (measured as C1) in any calendar quarter, the owner/operator shall conduct an annual emissions estimate in order to demonstrate compliance with part 5 and shall submit the results to the district within 30 days of the annual emissions calculation. For any calendar quarter in which one or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all S-483 fugitive components in organic service utilizing District approved methods for the consecutive 12 month period ending with the current quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the owner/operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all S-483 fugitive components in organic service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 5.
[Basis: Cumulative Increase, Offsets]

7. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts at S-483, each component's unique permanent identification codes,

```
monitoring results, and any annual emissions estimates
required per part 6 for at least five years from date of
entry. The log shall be retained on site and made
available to district staff upon request.  [Basis:
offsets, recordkeeping]
```

RECOMMENDATION

Reissue an Authority to Construct for the following equipment:

S-483 Carbon Tetrachloride Rail Car Loading Rack

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 21858

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct a Nitrapyrin Formulation Plant. The plant will be constructed on the old latex plant site and will utilize equipment from the former latex plant, which was shutdown in 2009. The latex plant operated from 1956 to 2009. Nitrapyrin nitrogen stabilizer is a commercial agricultural product that optimizes the yield potential of corn crops by ensuring nitrogen is available in the root zone during key stages of corn growth when used with liquid fertilizer or manure.

The Nitrapyrin plant consists of the following equipment:

Source	Dow Number	Description	Size (gals)	Exempt
S-718		Nitrapyrin Formulation Plant		Not Exempt
S-719 (exempt)	D-121 A	Aromatic 200 Pressure Tank	35,900	2-1-123.3.2
	Tote	Drapex	Unknown	2-1-123.3.6
	Isotainer	N-Serve TG	Unknown	2-1-103
S-720	T-310	Organic Mix	9,000	2-1-103
S-721 (exempt)	D-110A	PAPI Storage Pressure Tank	7,900	2-1-123.3.2
	T-751, Tote	Proxel	375	2-1-103
S-722 (exempt)	T-8	Tergitol S-15	5,900	2-1-123.3.6
S-723 (exempt)	T-9	Tergitol S-15	5,900	2-1-123.3.6
	Tote	Antifoam	Unknown	2-1-103
S-724 (exempt)	T-15	Propylene Glycol Storage	7,800	2-1-123.3.2
S-725	V-250	Aqueous Mix	2,900	2-1-103
S-726	T-112	Emulsion Storage	8,800	2-1-103
S-727	T-11	Gel Phase Mix	1,500	2-1-103
S-728	T-20	Ethylene Diamine Storage Pressure Tank	8,200	Not Exempt
S-729	V-100	Encapsulation Vessel	8,200	2-1-103
S-730	T-569	Nitrapyrin Formulation Storage	80,000	2-1-103
S-731	T-570	Nitrapyrin Formulation Storage	80,000	2-1-103

Two sources are not considered exempt from District permitting requirements: S-718 Nitrapyrin Formulation Plant and S-728 Ethylene Diamine Storage Pressure Tank. The emissions from S-718 are fugitive POC emissions from leaks in various components. The emissions of Ethylene Diamine from S-728 are considered to be negligible due to the fairly low vapor pressure of the material, 0.207 psia, and the fact that the tank is a pressure tank that is vapor balanced when loaded. There are no normal breathing and working losses associated with this tank. All of the remaining tanks associated with the project are exempt as identified above. The emissions of air toxics (naphthalene) from all of the exempt tanks were included in the health risk screen to ensure conservative results.

Dow Figure 2-3, Project Component Flow Chart, for the Nitrapyrin Formulation Project shows the material flow through the Nitrapyrin plant.

EMISSIONS SUMMARY

The primary emissions from the Nitrapyrin plant are the fugitive emissions from leaking components. The fugitive emissions are POC with a fraction of naphthalene.

The emissions from the Nitrapyrin plant are expected to be low due to the properties of the materials being handled at the plant.

The table below shows the organic chemicals in use at the plant and the vapor pressures in psia.

Chemical	**Vapor Pressure (psia)**
N-Serve TG	0.012
Aromatic 200	0.0008
Drapex	0.002
PAPI	0.0000002
Proxel	8.4 E-09
Tergitol	0.000193
Geropon	Solid
Kraftsperse	Solid
Antifoam 100	0.019
Propylene Glycol	0.005
Avicel	Solid
Kelzan	Solid
Ethyl Diamine	0.207
Encapsulated Nitrapyrin	Negligible

The fugitive component counts for the project are contained in the following Table.

Component	**Project Estimate**	**Project Estimate with 20% Contingency**
Valves	367	440
Connections (Flanges)	936	1123
Pumps	17	20
Pressure Relief Devices	11	13
Agitators	6	7

Dow is installing BACT components for the majority of fugitive components in use at the Nitrapyrin plant. The components that do not meet District BACT requirements are identified below.

7 to 10 - Rising Stem Valves
1 - Single Mechanical Seal Pump for Propylene Glycol Offloading
1 - Single Mechanical Seal Pump for Aromatic 200 Offloading
5 - Pressure Relief Devices

Dow has requested that the fugitive emissions from the Nitrapyrin plant be limited below the POC BACT trigger level of 10 lb per day. The District has estimated the maximum fugitive emissions from the project using the following calculation:

POC Permit Limit lb/year = 9.9 lb POC/day (Below BACT trigger) x 180 days/year (Typical Service) = 1782 lb/year POC, 0.891 ton/year POC

Napthalene Permit Limit = 1782 lb POC/year x 0.14 lb Napthalene/lb POC = 249.48 lb/year of Napthalene

The Nitrapyrin plant plans to be in production at two different times during the year for two months at a time. Some of the fugitive components will be in service all year long. The remaining fugitive components will be in service for 180 days per year. Dow will purge some of the chemical lines in between production runs when the plant is idle. Dow intends to continue to monitor purged fugitive components since some chemical residue may remain in the chemical lines.

Dow provided the District detailed fugitive emissions data for another plant within Dow in order to estimate fugitive emissions from the Nitrapyrin project. Average data was taken from the Symtet (Chlorpyridines) Plant Block 660. This plant handles higher vapor pressure materials (perchloroethylene, carbon tetrachloride) than the Nytrapyrin facility. Using average emissions data from this facility and assuming no pegged leakers the POC emissions were estimated by the District to be 703 lb/year (See attachment 1 for detailed calculations.)

The 703 lb POC per year estimate is extremely conservative since the Nitrapyrin plant does not handle materials with vapor pressures as high as carbon tetrachloride (1.76 psia) or perchloroethylene (0.27 psia). Only one chemical in use at the Nitrapyrin plant has a comparable vapor pressure and that is ethyl diamine (0.207 psia). In addition, the Nitrapyrin plant will operate at lower temperatures and pressures than the Symtet plant.

The District is confident that as long as there are no pegged leakers at the Nitrapyrin plant that emissions should remain below the 10 lb/day BACT trigger level. Assuming the plant only had fugitive components in service for 150 days, the normal emissions per day would be 703 lb/year x 1/150 days = 4.69 lb/day. The facility plans to be in production for 120 days and the fugitive lines would be in service several weeks before and after each production run. The District estimates a minimum of 150 days in service for all fugitive components. The District believes the lines would really be in service for 180 days per year, but is using 150 days per year to be conservative.

The District estimates that a pegged leaker (TOC reading greater than 10,000 ppm) would have the following emission rates for each component.

Component	**Emissions POC (lb/day)**
Valves	3.39
Flange	5.03
Connectors	1.59
Pumps	4.71
Pressure Relief Devices	4.34

Notes: Per CAPCOA Correlation Equations

Dow would still be able to meet the 10 lb/day limit with one pegged leaker. The worst case would be normal emissions of 4.69 lb/day added to 5.03 lb/day for a total of 9.72 lb/day of POC.

In order to ensure that the Nitrapyrin plant never exceeds the 10 lb per day BACT trigger level for POC, the District will impose permit conditions requiring Dow to demonstrate compliance with the 9.9 lb/day permit limit if a leak greater than 5,000 ppm is found at the Nitrapyrin plant. Dow would be subject to enforcement action if the 9.9 lb/day POC limit was ever exceeded.

The Nitrapyrin Plant will also emit small amounts of particulate matter which have been estimated by Dow using the following equation:

Dow estimates the Particulate Matter emissions using the following equation:

PM10/PM2.5 lb/year = 161.05 tons/year of solids x 0.061 lb Particulate/ton = 9.82 lb/year

Emission Factor for PM from EPA AP-42 Table 9.9.1-1 for Grain Handling (3/03).

The Table below shows the project POC emissions and includes emissions from exempt sources.

Plant Cumulative Increase: (tons/year)

Pollutant	**Existing**	**New**	**Total**
POC	1.908	0.891	2.799
PM	1.619	0.005	1.624

Please note the cumulative increase shown above is for Applications since 1991.

Dow will be submitting additional offsets for some applications processed since 1991 that were offset at a ratio of 1.00 to 1.00 for POC. These applications should have been offset at a ratio of 1.15 to 1.00 for POC. In addition, Dow had not yet surrendered the offsets for Application No. 19565 which had POC emissions of 0.08 tons/year and requires 0.092 tons/year of offsets.

The table below summarizes the additional offsets Dow will provide the District under this application.

Application	**Increase (ton/year)**	**Contemporaneous Reductions (tons/year)**	**Offsets Provided (tons/year)**	**Additional Offsets Required (tons/year)**
1850	0.032		0.032	0.0048
3249	0.022		0.022	0.0033
6290	0.576	0.576		
12025	0.102		0.117	
19565	0.080		0.092	
8824	0.070		0.070	0.0105
9962	0.160	0.008	0.152	0.0228
12515	0.190	0.190		
17265	0.001	0.001		
18105	0.057	0.057		
18750	0.538		0.538	0.0807
19565	0.080			0.080
Total				0.202

The total offsets that will be surrendered by Dow will equal 0.891 tons/year for this application added to the 0.202 tons/year from the Table above which will bring the total POC offsets to 1.093 tons/year.

Toxic Risk Screening:

Napthalene emissions from the project are estimated at 252.97 lb/year from all sources including exempt tanks. The trigger level for naphthalene is 3.2 lb/year per Regulation 2, Rule 5. This application required a Risk Screening Analysis under Regulation 2 Rule 5.

The maximum cancer risk estimated for the project was 0.31 in a million and the maximum chronic hazard index was 0.0011 (See Memorandum dated September 7, 2010 from Jane Lundquist.) These results are in accordance with the requirements of Regulation 2, Rule 5, Section 301 for a source not installing TBACT (cancer risk less than one in a million with a chronic hazard index less than 0.2.)

STATEMENT OF COMPLIANCE

The owner/operator of S-718 and S-728 shall comply with Permit Condition No. 24763.

S-718 will be required to meet the requirements of District Regulation 8, Rule 18 Equipment Leaks. Dow is expected to comply with the requirements of Regulation 8, Rule 18.

S-728 will be required to meet the requirements of District Regulation 8, Rule 5 Storage of Organic Liquids. S-728 is expected to comply with the requirements of Regulation 8, Rule 5.

The project will require a minor revision to the Title V permit that will be processed with the Title V renewal Application No. 18262. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

2-6-226 **Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:

226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);

226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);

226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;

226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:

4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or

4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;

226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;

226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or

226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project (See NSPS discussion below.) The NESHAPs general provisions under 63.41 do not have a definition for modification. The NESHAPs discuss reconstruction of a major source of HAPs. The facility has current actual emissions below the major source thresholds and permit condition No. 24004 that limits these emissions. The project will not change the facility status when compared to major source thresholds for HAP and therefore should not be considered a modification under the NESHAPs. In addition, the project is not subject to any MACT requirements. The project does not change or relax existing monitoring, reporting, or recordkeeping requirements. The project does not involve a change to a permit term or condition allowing a facility to avoid an applicable requirements. The project does not establish or change a case by case determination of any emission limit or standard which may apply if a project increases emissions above the major source thresholds for HAP. The project does not involve changes described in 2-6-226.6 or 2-6-226.7.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.3, Chapter 5.3.4, Chapter 5.4)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the “no net emission increase” provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District

Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10^{-6}) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT since emissions of POC and PM10 do not exceed 10 lb/day from any permitted source.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emissions from the facility and the emission calculations above, offsets are required for this application. Dow is required to provide POC offsets at a ratio of 1.15 to 1.0. Dow has agreed to surrender Emission Reduction Credit No. 1172 (0.4 tons/year) and a portion of Emission Reduction Credit No. 1147 to offset 1.093 tons/year to offset this application, the cumulative increase from application No. 19565, and the 0.15 offset ratio from various applications processed since 1991. Please see the discussion under the cumulative increase section for additional details.

NESHAPs

Dow has a facility wide condition that limits the emissions of hazardous air pollutants from the facility.

```
COND#  24004   ---------------------------------------

     Dow Chemical, Plant #31,
     The following conditions establish the federally enforceable
     permit terms that ensure this plant is classified as a Minor
     source of Hazardous Air Pollutants under District Regulation
     2, Rule 6, Major Facility Review. All applications submitted
     by the applicant and all modifications to the plant's
     equipment after issuance of the minor HAP permit must be
     evaluated to ensure that the facility will not exceed the
     HAP minor general limits below, and that sufficient
     monitoring, recordkeeping, and reporting requirements are
     imposed to ensure enforceability of the limits.

     Any revision to a condition establishing this plant's status
     as a HAP Minor Facility or any new permit term that would
     limit emissions of a new or modified source for the purpose
```

```
of maintaining the facility as a HAP minor, must undergo the
procedures pursuant to Regulation 2, Rule 6, section 423.
The basis for the HAP minor conditions is an emission limit
for a single hazardous air pollutant of less than 9 tons per
year, and an emission limit for a combination of hazardous
air pollutants of less than 23 tons per year.

1.  The owner/operator of Dow Chemical Pittsburg facility
    shall not emit more than 9 tons of any single hazardous
    air pollutant (HAP) or 23 tons of any combination of
    HAPs in any consecutive 12-month period. (basis: Clean
    Air Act, Section 112, District Regulation 2, Rule 6)

2.  The owner/operator of Dow Chemical Pittsburg facility
    shall maintain quarterly emission estimates to
    demonstrate compliance with this condition. The
    owner/operator shall prepare all emission estimates
    using District approved calculations. Emission estimates
    for each calendar quarter shall be prepared by the
    owner/operator of Dow Chemical Pittsburgh facility
    within 30 days from the end of the calendar quarter.
    Emission estimates shall be submitted to the District
    upon request. The owner/operator shall notify the
    District immediately if emission estimates indicate Part
    1 of this condition has been exceeded during any
    consecutive 12 month period.
```

This condition limits emissions of hazardous air pollutants below the major hazardous air pollutant thresholds for new MACT standards that have taken effect this condition was added to the District permit on May 7, 2008.

The Nitrapyrin plant could be subject to MACT standards that the facility was already subject to prior to May of 2008. Dow and the District have reviewed the MACT standards that the facility is currently subject to and has determined that only the Organic Liquid Distribution MACT (40 CFR Part 63 Subpart EEEE) may apply to the Nitrapryin plant.

Subpart EEEE applies to each new, reconstructed, or existing operation affected source. The affected source under Subpart EEEE is the collection of activities and equipment used to distribute “organic liquids” into, out of, or within a facility that is a major source of HAP emissions.

In order to determine if the Nitrapyrin plant is subject to Subpart EEEE the District needed to determine if the plant handled any “organic liquids” as defined by the Subpart.

For the purposes of Subpart EEEE organic liquids do not include any of the following:

Gasoline, kerosene, diesel, asphalt, and heavier distallate oils and fuel oils;
Any fuel consumed or dispensed on the plant site directly to users;
Hazardous waste;
Wastewater;
Ballast water; or

Any non-crude oil liquid with an annual average vapor pressure less than 0.7 kilopascals (0.1 psia).

Under Subpart EEEE annual average true vapor pressure is the equilibrium partial pressure exerted by the total Table 1 organic HAP in the stored or organic liquid (See 63.2406 Definitions).

Napthalene and 4,4-methylenediphenyl diiisocyanate are HAPs used in the Nitrapyrin plant that are in Table 1 of Subpart EEEE.

The true vapor pressure of naphthalene at 25 deg. C is 0.00556 psia.
The true vapor pressure of 4,4-methylenediphenyl diisocyanate at 25 deg. C is 1.84E-07 psia.
The annual average true vapor pressure of the total HAPs (two) in any tank in the Nitrapyrin plant will be well below 0.1 psia. Therefore, there are no organic liquids, as defined by Subpart EEEE, in use at the Nitrapyrin plant and Subpart EEEE does not apply.

Dow Pittsburg is not subject to Synthetic Organic Chemical Manufacturing Industry requirements contained in 40 CFR 63 Subpart F, Subpart G, and Subpart H. The requirements of 40 CFR 60 Subpart I apply to the Symtet manufacturing area of the Dow facility, but would not apply to the Nitrapyrin plant.

NSPS

Dow and the District reviewed the NSPS regulations that apply to the facility and determined that none of the NSPS regulations apply to the Nitrapyrin plant. Specifically, Subpart Kb – Volatile Organic Liquid Storage does not apply to the Nitrapyrin plant. All of the the organic liquid storage tanks at the Nitrapyrin plant were exempt based on one of the following exemptions:

1. Vessels with a capacity less than 19,800 gallons are exempt.
2. Vessels with a capacity greater than 19,800, but less than 38,890 gallons storing a liquid with a maximum true vapor pressure which is less than 2.18 psia. Aromatic 200 Tank S-719 (D-121A) meets this exemption.
3. Vessels with a capcity greater than 39,890 gallons storing a liquid with a maximum vapor pressure less than 0.5 psia. The two large product storage tanks S-730 and S-731 meet this exemption with a product vapor pressure that is less than 0.3 psia.
4. Pressure vessels designed to operate at a pressure greater than 15 psig without emissions to the atmosphere. S-719 (D-121) Aromatic 200 tank meets this exemption.

Subpart VV does not apply to the Nitrapyrin plant since construction will commence after November 7, 2006.

Subpart VVA does not apply to the Nitrapyrin plant since this plant does not produce a chemical regulated under the synthetic organic chemical manufacturing industry (SOCMI) requirements as an intermediate or a final product.

PSD does not apply to this specific permit application.

PERMIT CONDITIONS

COND# 24763 ----------

Plant 31
S-718 Nitrapyrin Plant

1. The owner/operator of the Nitrapyrin plant shall construct and operate the plant as described in Application No. 21858. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in Application No. 21858. [Basis: 2-2-419]

2. Within 30 days of District's issuance of the Permit to Operate for Application 21858 or the completion of the Nitrapryin Plant, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes for this project. The owner/operator has been permitted to install the following fugitive components:

   367 valves;
   936 connections (flanges, connectors);
   17 pumps;
   13 pressure relief devices;
   7 agitators (mechanical stirrers);

   [Basis: Cumulative Increase, Offsets, Regulation 2-5]

3. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT, Regulation 8 Rule 18]

4. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.
   [Basis: Regulation 8 Rule 18]

5. The Owner/Operator shall comply with a leak standard of 500 ppm of TOC (measured as C1) at any pumps in organic liquid service installed as part of the Nitrapyrin Plant unless the Owner/Operator

complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: Regulation 8 Rule 18, Cumulative Increase, Offsets]

6. The Owner/Operator shall conduct inspections of fugitive components installed as part of the Nitrapyrin Plant in organic liquid service in accordance with the frequency below:

   Pumps: Quarterly
   Valves: Quarterly
   Connectors (Not Flanges): Biannual
   Flanges: Biannual

   [Basis: 2-2-419, Regulations 8 Rule 18]

7. The Owner/Operator shall not exceed 0.891 tons of POC emissions per consecutive 12 month period measured as C1 from all fugitive components installed as part of the Nitrapyrin Plant in organic liquid service. The Owner/Operator shall not exceed 9.9 lb/day of POC measured as C1 from all fugitive components. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. Compliance with this provision shall be verified quarterly using methods described in part 8. The results shall be submitted to the District within 30 days of the close of each calendar quarter after the completion of the Nitrapyrin Plant or the District's issuance of the Permit to Operate for Application 21858.
   [Basis: 2-2-419, Cumulative Increase, Offsets]

8. If all of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate less than 5000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate equal to or greater than 5,000 ppm of TOC (measured as C1) in any calendar quarter, the owner/operator shall estimate the annual emissions and daily emissions in order to demonstrate compliance with part 7 and shall submit the results to the district within 30 days of the emissions calculation. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. For any calendar quarter in which one

or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all Nitrapyrin Plant fugitive components in organic liquid service utilizing District approved methods for the consecutive 12 month period ending with this quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the Owner/Operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all Nitrapyrin Plant fugitive components in organic liquid service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 7. [Basis: 2-2-419, Cumulative Increase, Offsets]

9. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts of the Nitrapyrin Plant, each component's unique permanent identification codes, monitoring results, and any annual emissions estimates required per parts 7 and 8 for at least five years from date of entry. The log shall be retained on site and made available to district staff upon request.[Basis: Offsets, Recordkeeping]

RECOMMENDATION

I recommend issuing an Authority to Construct for the following equipment:

S-718 Nitrapyrin Formulation Plant
S-728 Ethylene Diamine Storage Pressure Tank

EXEMPTIONS

I recommend issuing the following exemptions:

S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons
S-720 (T-310) Organic Mix, 9,000 gallons
S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons
S-722 (T-8) Tergitol S-15, 5,900 gallons
S-723 (T-9) Tergitol S-15, 5,900 gallons
S-724 (T-15) Propylene Glycol Storage, 7,800 gallons
S-725 (V-250) Aqueous Mix, 2,900 gallons
S-726 (T-112) Emulsion Storage, 8,800 gallons
S-727 (T-11) Gel Phase Mix, 1,500 gallons
S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons
S-729 (V-100) Encapsulation Vessel, 8,200 gallons
S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons
S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 22775

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of the hydrogen chloride absorption systems in use at the Trifluoro (TF) and the (FTF) production processes at its Pittsburg California facility. The alteration involves removing the existing HCl absorption/abatement system and the HCl strorage tank in use at the TF plant, and rerouting the anhydrous HCl from the TF plant to the reaction/HCl absorption system at the FTF plant. The alteration will not affect other equipment downstream of the reaction/HCl absorption system in the FTF process. The existing abatement systems at the FTF plant including the venturi scrubber and the caustic packed bed scrubber will provide adequate control of acid gas emissions.

The TF plant has a stream from two organic scrubbers (A-98 and A-99) that contains mainly anhydrous HCl, a small amount of HF, and small amount of organics and is currently abated by two absorbers (A-101 falling film absorber and A-102 packed column absorber). Dow intends to reroute the anhydrous HCl stream from A-98 and A-99 to the reaction/HCl absorption system S-694 at the FTF plant. The TF plant abatement devices A-101 and A-102 would then be removed from service. Additionally, S-449 HCl tank will also be removed from service.

The FTF plant S-694 consists of reactors and columns that have sufficient capacity to absorb the additional HCl stream from the TF plant. The only changes at S-694 are the installation of piping to route the anhydrous HCl from the TF plant into the reactors. The abatement devices downstream of the HCl absorption system S-694 are a venturi scrubber (A-196) followed by a caustic packed bed scrubber (A-195). The exhaust from A-195 exits to atmosphere.

HCl emissions after abatement should decrease after the project is complete since the abatement systems at the TF plant used water scrubbers and the FTF plant utilizes a caustic scrubber. Caustic scrubbers are more effective in removing HCl from an exhaust stream. The caustic scrubber A-195 should have an efficiency of 99.9%. The change in abated emissions to atmosphere at the caustic scrubber A-195 are shown below. The emissions increase at the FTF plant is well below the Regulation 2, Rule 5 acute and chronic trigger levels of 4.6 lb/hour and 350 lb/year of HCl. The point source emissions of HCl are reduced as a result of the project.

HF emissions from the TF plant are currently abated by two organic scrubbers (A-98 and A-99) and the existing TF water scrubbers. The emissions of HF are expected to remain the same after the project however the TF plant emissions will now be emitted at the FTF plant. HF emissions from the TF plant combined with the FTF plant are considered negligible and are well below a pound per year. The HF emissions from the combined TF and FTF plant will remain well below the Regulation 2, Rule 5 trigger level of 0.53 lb/hour and 540 lb/year.

Organic emissions from the TF plant are currently abated by two organic scrubbers (A-98 and A-99). TF organic emissions will remain the same after the project is completed will now be emitted at a different emissions point. Organic emissions from the TF plant are typically less than 100 lb per year. The FTF plant typically has organics emissions that are less than 50 lbs per year.

Dow will also have to install new fugitive components and remove old fugitive components as part of this project. Based on information submitted in the permit application component counts are expected to decrease after rerouting the anhydrous HCl line from the TF plant to the FTF plant. Dow intends to remove more components than are installed for the project. Therefore, fugitive HCl emissions should decrease as a result of the project.

Dow conducts area monitoring throughout the TF and FTF plant for hydrofluoric acid gas, but the sensors respond to HCl, HF, or Chlorine in the 1 to 2 ppm range. Large leaks would be picked up by the area monitoring system and fixed to minimize worker exposure and fugitive emissions.

Dow plans to shutdown the following equipment after completion of the project:

S-449 HCl Storage Tank (T-30)
A-101 Falling Film Absorber (H-205)
A-102 Scrubber (B-206)

EMISSIONS SUMMARY

Point Sources

Based on information submitted by Dow worst case emissions of HCl will be decreased at the TF plant by the following amount:

HCl lb/hour emissions = 450 lb/hour sent to abatement x ((100-90)/100) x ((100-99.96)/100) = 0.018 lb/hour

Based on information submitted by Dow worst case emissions of HCl will be increased at the FTF plant by the following amount:

HCl lb/hour emissions = 450 lb/hour sent to abatement x ((100-99)/100) x ((100-99.9)/100) = 0.0045 lb/hour

Total emissions of HCl from the FTF plant

HCl lb/hour emissions = 850 lb/hour sent to abatement x ((100-99)/100) x ((100-99.9)/100) = 0.0085 lb/hour, 0.204 lb/day, 74.46 lb/year

There is no net increase in HCl emissions from the defined emission points for the TF and FTF plant associated with this application.

As stated previously the HF emisssions from the TF plant will remain negligible after the project. The annual emission of HF from the TF and FTF plants combined is well below a pound per year. The HF emissions from the combined TF and FTF plant will remain well below the Regulation 2, Rule 5 trigger level of 0.53 lb/hour and 540 lb/year.

As stated previously the Organics emission from the TF and FTF plant will remain the same after the project except that the TF organic emissions will now be emitted at a different emissions point. The organic emissions from the TF plant are typically less than 100 lb/year. The organic emissions from the FTF plant are typically less than 50 lb/year.

Fugitive Sources

Dow will remove more components from the shutdown of equipment than they will install to reroute the anhydrous HCl line from the TF line to the FTF plant.

Existing Components at the TF plant to be removed from service:

	Pump	Fittings	Flanges	Pressure Safety Valves	Valves
Anhydrous HCl	0	17	51	1	12
HCl solution	2	0	277	1	35

New welded line from TF plant to FTF plant:

	Pump	Fittings	Flanges	Pressure Safety Valves	Valves
Anhydrous HCl	0	0	21	1	8

Valves: 3 Inline, 5 Drain

There is no increase in emissions from the fugitive emission points for the TF and FTF plant associated with this application, since the number of fugitive components will decrease after the project is completed. Fugitive emissions are not expected to be greater than the Regulation 2, Rule 5 trigger levels for HCl due to the ongoing area monitoring. Large HCl leaks at the TF and FTF plants would be repaired to minimize worker exposure and minimize fugitive emissions.

Plant Cumulative Increase: (tons/year)

HCl emissions from point sources and fugitive emissions sources are reduced after the project when compared to existing levels. HF emissions remain negligible before the project and after the project is completed. Organics emissions remain the same pre and post project with only the location of the emissions point changing for S-474.

Toxic Risk Screening:

Toxic air contaminant emissions associated with this application do not exceed the acute or chronic trigger level of 4.6 lb/hour and 350 lb/year for hydrochloric acid. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-694 shall continue to comply with Permit Condition No. 15932 and 21060. No changes to these conditions are required as part of this application.

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 since it is an alteration of an existing source S-694 and abatement device A-195 requiring an Authority to Construct. Regulation 2, Rule 1-312.6 states: Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.
312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT, because the POC emissions from each plant remain unchanged.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

NSPS

There is no NSPS that applies to S-474 or S-694.

NESHAP

40 CFR Part 63 Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-474 or S-694 since the HCl produced by these units is less than 30% by weight (See 40 CFR Part 63.8985).

PSD does not apply to this specific permit application.

PERMIT CONDITIONS

This application does not require modifying permit conditions. Condition No. 15932 contains the requirements for S-694 and A-195.

RECOMMENDATION

Approve the alteration of the following equipment:

Reroute a process vent from S-474 Chemical Reactor to S-694 Reaction/HCl Absorption System.

Change emission trains from:

S-474=>A98=>A99=>A101=>A102=>P199

To:

S-474=>A98=>A99=>S-694=>A196=>A195=>P269

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 23595

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct to modify S-444 (U-183) Dowtherm Process Heater.

S-444 U-183 Dowtherm Heater
Furnace - Other, 25MM BTU/hr max, Natural gas, Forced Draft
C4840189 /,P259,

The source is having the burner replaced to meet Regulation 9, Rule 7 requirements. The installation of the new burner is considered a modification since the firing rate of S-444 will increase from 25 MMBtu/hour to 26.9 MMBtu/hour. Emissions of CO, POC, PM10, and SO2 will increase due to replacement of the burner and the increased firing rate.

EMISSIONS SUMMARY

The following emission calculations show the permit potential pre project, the 3-year baseline, and the permit potential post project.

Dow Chemical Company
Application No. 23595
BAAQMD September 2011

Permit Potential S-444 (U-183) Dowtherm Process Heater Pre project

	ppm	lb/MMBtu	Firing Rate MMBtu/hr	lb/hour	lb/day	lb/year	ton/year
NOx	30	0.0364	25	0.910	21.840	7971.6	3.986
CO	50	0.0369	25	0.923	22.140	8081.1	4.041
POC	12.8	5.39E-03	25	0.135	3.234	1180.41	0.590
PM10/PM2.5		7.45E-03	25	0.186	4.470	1631.55	0.816
SO2		0.0007	25	0.018	0.420	153.3	0.077

NOx and CO Emission Factors based on Current Permit Limits
POC, PM10 Emission Factors from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)
SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content
Natural Gas 1020 Btu/scf

3-Year Baseline S-444 (U-183) Dowtherm Process Heater

	ppm	lb/MMBtu	Firing Rate MMBtu/year	lb/year	ton/year
NOx	22.52	0.0273	189000	5159.7	2.580
CO	6.06	0.00448	189000	846.72	0.423
POC	12.8	5.39E-03	189000	1018.71	0.509
PM10/PM2.5		7.45E-03	189000	1408.05	0.704
SO2		0.0007	189000	132.3	0.066

NOx and CO Emission Factors based on 11/11/2008 Source Test (See OS-2603)
POC, PM10 Emission Factors from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)
SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content
Natural Gas 1020 Btu/scf
Natural Gas Usage for 2008 was 2.02 E06 Therms, 2009 was 1.80 E06 Therms, and 2010 was 1.85 E06 Therms.
Annual Average Last Three Calendar Years 189,000 MMBtu/year.

Permit Potential S-444 (U-183) Dowtherm Process Heater Post project

	ppm	lb/MMBtu	Firing Rate MMBtu/hr	lb/hour	lb/day	lb/year	ton/year	Increase from Baseline ton/year
NOx	9	0.0109	26.9	0.293	7.037	2568.52	1.284	-1.296
CO	50	0.0369	26.9	0.993	23.823	8695.264	4.348	3.924
POC	15	0.00633	26.9	0.170	4.087	1491.627	0.746	0.236
PM10/PM2.5		7.45E-03	26.9	0.200	4.810	1755.548	0.878	0.174
SO2		0.0007	26.9	0.019	0.452	164.9508	0.082	0.016

NOx and CO based upon vendor guarantee
POC based upon vendor guarantee, PM10 Emission Factor from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)
SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content
Natural Gas 1020 Btu/scf

Dow Chemical Company
Application No. 23595
BAAQMD August 2011

Compound	Firing Rate (MMBtu/hour)	EF (lb/MMBtu)	Emissions (lb/hour)	Emissions (lb/year)	Acute Trigger (lb/hour)	Chronic Trigger (lb/year)
Benzene	26.9	2.06E-06	5.54E-05	4.85E-01	2.90E+00	3.80E+00
Formaldehyde	26.9	7.35E-05	1.98E-03	1.73E+01	1.20E-01	1.80E+01
Toluene	26.9	3.33E-06	8.96E-05	7.85E-01	8.20E+01	1.20E+04

Emissions of NOx are reduced by the project on an annual basis. NOx emissions after the project is completed are below the 10 lb/day BACT trigger level. Emissions of CO, POC, PM10, and SO2 increase due to the project on an annual and daily basis. CO is the only pollutant exceeding the 10 lb/day BACT trigger level.

Emissions of TACs are below the acute and chronic trigger levels.

Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
NOx	1.804	-1.296	1.804
CO	2.588	3.924	6.512
POC	3.056	0.236	3.292
PM10	1.624	0.174	1.798
SO2	0.110	0.016	0.126

The facility has provided offsets for the existing cumulative increase for NOx and POC. There is no increase in NOx associated with this application. The increase in POC of 0.236 tons/year due to this application will need to be offset by Dow in accordance with Regulation 2, Rule 2, Section 302 requirements at a 1.15 to 1 ratio. The total POC offsets required is 0.271 tons POC/year (1.15 x 0.236 tons POC/year). Dow will offset the POC emissions from this application (0.271 ton/year POC) using Emission Reduction Certificate 1172 (0.4 tons/year POC) with the balance being granted back to Dow under a new certificate number.

The permitted emissions of PM10 and SO2 are less than 100 tons/year and offsets are not required for these pollutants. The facility had a cumulative increase for CO of more than 100 tons/year before 1991. However, CO offsets are not required and no further analysis of the potential to emit for CO is necessary.

Toxic Risk Screening:

Toxic air contaminant emissions associated with this application do not exceed the acute or chronic trigger levels shown above. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-444 shall continue to comply with Permit Condition No. 11054. The changes to this permit condition is shown below in strikethrough/lineout format.

S-444 is expected to comply with Regulation 9 "Inorganic Gaseous Pollutants", Rule 7 "Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters". Specifically, S-444 is subject to the NOx (9 ppmv, dry at 3% O_2) and CO (400 ppmv, dry at 3% O_2) *final* emission limits outlined in Sections 307.5 of the above rule. S-444 is required to meet the above NOx and CO limits on January 1, 2012. The current version of Regulation 9, Rule 7 is not federally enforceable.

Dow has submitted a compliance plan to the District for all heaters and combustion sources subject to Regulation 9, Rule 7 requirements. The plan indicates Dow will be in compliance with Regulation 9, Rule 7 on a facility-wide basis.

The modification of S-444 is considered a minor revision to the Title V permit. Dow submitted application no. 23596 on 7/25/11 to incorporate this minor revision into the Title V permit. The modification of S-444 does not meet the definition of an administrative amendment under 2-6-201 and is not considered a significant revision since it does meet the definition under Regulation 2-6-226. It should be noted that S-444 will be subject to stricter monitoring after the project is completed. S-444 will now be required to source test on an annual basis instead of every three years.

The California Environmental Quality Act (CEQA):
Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

For this permit application, the District has determined that its evaluation of S-444 is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapter 2.1 “Boilers, Steam Generators & Process Heaters”. Since the District has classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 have been met, and that the issuance of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310. The proposed burner retrofit is also exempt from CEQA per Section 2-1-312.3.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does trigger BACT, because the CO emissions from S-444 are increasing on a daily and annual basis and are greater than 10 lb/day.

The District BACT Workbook has the following information:

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	***Heater - Refinery Process, Natural or Induced Draft***	Revision:	***3***
		Document #:	***94.1.1***
Class:	***5 MMBtu/hr to <50 MMBtu/hr Heat Input***	Date:	***08/12/94***

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *n/d* 2. *n/s*	1. *n/d* 2. *Good Combustion Practice*[a]
NOx	1. *10 ppmv @ 3% O_2 Dry*[a,b,c,e] 2. *25 ppmv @ 3% O_2 Dry*[a,b,e]	1. *Selective Catalytic Reduction (SCR) + Low NO_x Burners*[a,b,c] 2. *Low NO_x Burners; or Low NO_x Burners + Selective Non-Catalytic Reduction (SNCR)*[a,d]
SO_2	1. *Natural Gas or Treated Refinery Gas Fuel w/ $\leq$50 ppmv Hydrogen Sulfide and $\leq$100 ppmv Total Reduced Sulfur*[a] 2. *Natural Gas or Treated` Refinery Gas Fuel w/ $\leq$100 ppmv Total Reduced Sulfur*[a]	1. *Fuel Selection*[a] 2. *Fuel Selection*[a]
CO	1. *n/d* 2. *50 ppmv @ 3% O_2 Dry*[a,f]	1. *n/d* 2. *Good Combustion Practice*[a]
PM_{10}	1. *n/d* 2. *Natural Gas or Treated Refinery Gas Fuel*[a,b]	1. *n/d* 2. *Fuel Selection*[a,b]
NPOC	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*

References

a. BAAQMD
b. BAAQMD A #30783
c. BAAQMD A #3318
d. BAAQMD A #8407
e. NO_X determination by BAAQMD Source Test Method ST-13A or B (average of three 30-minute sampling runs); or Continuous Emission Monitor (3-hour average); or BAAQMD approved equivalent.
f. CO determination by BAAQMD Source Test Method ST-6 (average of three 30 minute sampling runs); or Continuous Emission Monitor (3-hour average); or BAAQMD approved equivalent.

S-444 will meet the achieved in practice CO BACT limit of 50 ppm contained in the District BACT workbook. Condition No. 11054 will limit CO to 50 ppm @3% O2. At the present time the District is not aware of any lower CO BACT limits for process heaters that are less than 50 MMBtu/hour.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets of 0.179 tons/year of POC are required to process this application. Dow will offset the POC emissions from this application (0.179 ton/year POC) using Emission Reduction Certificate 1172 (0.4 tons/year POC) with the balance being granted back to Dow under a new certificate number.

NSPS

There is no NSPS that applies to S-444.

NESHAP

The existing Title V permit has S-444 being subject to limited requirements (initial notification requirement only) under 40 CFR, Part 63, Subpart DDDDD. Subpart DDDDD was remanded and vacated on June 8, 2007. This version of Subpart DDDDD was vacated before the compliance date(s) were reached so S-444 was never subject to this regulation.

Dow accepted a facility-wide permit condition to limit HAP emissions to below major source thresholds on May 7, 2008.

Subpart DDDDD was repromulgated and the final rule was published on March 21, 2011. On May 18, 2011 the effectiveness dates in the rule were delayed by the EPA. Subpart DDDDD only applies to process heaters located at major sources of HAP. The original Subpart DDDDD was vacated and then repromulgated and since Dow is no longer a major source of HAP this Subpart does not apply to S-444.

Subpart JJJJJJ applies to boilers at area sources, but not to process heaters. Subpart JJJJJJ also does not apply to natural gas fired boilers (See 63.11195(e)).

PSD does not apply to this specific permit application.

PERMIT CONDITIONS

COND# 11054 ----------

Application 12515, 23595
Conditions for S-444, Dowtherm Heater, U-183:

1. The Dowtherm Heater (S-444) shall burn natural gas only.
(Basis: BACT)

2a. ~~-~~This part shall apply until 1/1/2012. Except during periods of start-up or shutdown, the concentration of nitrogen oxide (NOx) emissions from S-444 shall not exceed 30 ppmvd at 3% oxygen.
(Basis: BAAQMD Regulation 9-7-301)

2b. This part shall apply on and after 1/1/2012. Except during periods of start-up or shutdown, the concentration of nitrogen oxide (NOx) emissions from S-444 shall not exceed 9 ppmvd at 3% oxygen.
(Basis: BAAQMD Regulation 9-7-307.5)

3. Except during periods of start-up or shutdown, the concentration of carbon monoxide (CO) emissions from S-444 shall not exceed 50 ppmvd at 3% oxygen.
(Basis: BACT)

4. Deleted.

5. To demonstrate compliance with Part 2 above, the owner/operator shall conduct an initial source test to determine NOx and CO emissions within 3 months of installing the ultra Low NOx burner. The owner operator shall conduct a source test for NOx and CO at least once every ~~5~~ year~~s~~ (with test frequency being no less than 10 months and no more than 12 months from the last test date). The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 45 days of test completion, a comprehensive report of the test results and calculations shall be submitted to the Manager of the District's Source Test Section for review and disposition.
(Basis: BAAQMD Regulation 9-7-307.5~~1~~, 9-7-506)

6. The owner/operator of S-444 shall maintain records of each startup and shutdown event, and source test records in a District-approved log. These records shall be retained on site for a minimum of five years from the date of entry and made available to District representatives upon request.
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 9-7-307.5~~1~~)

RECOMMENDATION

Issue a conditional Authority to Construct to Dow for the following:

S-444 U-183 Dowtherm Heater
Furnace - Other, 26.9 MM BTU/hr max, Natural gas, Forced Draft
C4840189 /,P259,

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 23852

BACKGROUND

Dow Chemical Company (Dow) has applied for an Authority to Construct to alter S-44 by replacing process vessel T-3 with an identical replacement process vessel.

S-44 N-Serve Plant
CHEM> Chemical reactor, greater than 1000 gallons

Emissions from S-44 will not change due to the replacement of T-3 process vessel. T-3 process vessel does not vent directly to atmosphere. The process vent streams from equipment downstream of T-3 are eventually vented through S-389 Symtet Halogen Acid Furnace or scrubbing systems within S-44.

Fugitive emissions are expected to decrease due to a reduction of some component types in service.

	Pumps	Fittings	Flanges	Pressure Safety Valves	Valves
Pre Project	0	35	68	2	35
Post Project	2	0	71	0	26

The replacement of T-3 will add two pumps and three flanges. 35 fittings, 2 safety valves, and 9 valves will be removed from service. Dow provided fugitive emissions monitoring data from the Symtet plant. Leakage was detected from three valves, one connector, and two pressure safety valves over the last three years. No pegged leakers were observed at the Symtet plant. The District estimates that emissions will be less than 10 lb/day with one pump as a pegged leaker and one valve as a pegged leaker using the CAPCOA correlation equations (See attached spreadsheet). The installation of the two pumps and three flanges is exempt from District permit requirements in accordance with 2-1-128.21.

> 128.21 Modification, replacement, or addition of fugitive components (e.g. valves, flanges, pumps, compressors, relief valves, process drains) at existing permitted process units at petroleum refineries, chemical plants, bulk terminals or bulk plants, provided that the cumulative emissions from all additional components installed at a given process unit during any consecutive twelve month period do not exceed 10 lb/day, and that the components meet applicable requirements of Regulation 8 rules.

The new components meet Regulation 8, Rule 18 requirements and will be monitored by Dow in accordance with Regulation 8, Rule 18 monitoring requirements. Dow has also verified that the new components meet District BACT guidelines for new fugitive components.

EMISSIONS SUMMARY

There is no emissions increase due to the replacement of T-3 at S-44 N-Serve plant. Fugitive emissions are expected to decrease due to the removal of components. The additional fugitive components being placed into service are exempt from District permit requirements as described above.

Post 1991 Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	3.292	0	3.292

Toxic Risk Screening:

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-44 shall continue to comply with Permit Condition No. 21060. This permit condition requires process vessels at the facility to comply with Regulation 8, Rule 10 requirements.

S-44 is expected to continue to comply with Regulation 1, Section 301 requirements to not cause a public nuisance.

S-44 is expected to continue to comply with Regulation 6, Rule 1 requirements.

S-44 is expected to continue to comply with Regulation 8, Rule 2, Section 301 requirements.

Dow is expected to operate process vessels at S-44 with Regulation 8, Rule 10 requirements.

The alteration of S-44 does not require any revisions to the Title V permit. There are no changes in equipment descriptions or permit conditions associated with this application.

The California Environmental Quality Act (CEQA):
The project is exempt from CEQA in accordance with Regulation 2-1-312.1 since it is an alteration of an existing source and it will not involve any increase in emissions.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT, because there is no emissions increase of any pollutant from S-44 due to the replacement of process vessel T-3.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. There are no emissions increases that are required to be offset associated with this application.

NSPS

S-44 is not subject to 40 CFR Subpart VV or 40 CFR Subpart VVa since this plant does not produce, as intermediates or final products, any of the Synthetic Organic Chemical Manufacturing Industry chemicals as defined in 60.489. The District also reviewed other NSPS standards and found none that apply to S-44 due to the types of chemical produced.

There is no NSPS that applies to S-44.

NESHAP

The District reviewed NESHAPs and found that none of them apply to S-44.

PSD does not apply to this specific permit application.

PERMIT CONDITIONS

There are no permit condition revisions associated with the replacement of process vessel T-3 at S-44.

RECOMMENDATION

Approve the alteration of the following equipment:

Replacement of process vessel T-3 at S-44.

S-44 N-Serve Plant
CHEM> Chemical reactor, greater than 1000 gallons

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 23934

BACKGROUND

Dow Chemical Company (Dow) has applied for a change of permit conditions for a carbon tetrachloride pressure storage tank S-680 and an associated truck transfer operation S-681.

S-680 T-440 Pressure Vessel Storage Tank
Pressure tank, 25K gal, White, Carbon tetrachloride, 10 ft diam

S-681 Truck Transfer
Truck, Carbon tetrachloride, Part splash, part submerged fill

Dow has requested this change in permit conditions to allow periodic inspections (every five years) or emergency repairs to be performed on S-680 (T-440) Pressure Vessel Storage Tank.

There are no emissions from S-680 during carbon tetrachloride storage. There are negligible emissons less than 2 lb/year of POC associated with the loading and unloading of carbon tetrachloride. Loading and unloading operations are abated by A-191 Vapor Balance System.

EMISSIONS SUMMARY

Dow estimates the increase in emissions of carbon tetrachloride at S-680 and S-681 to be 0.233 lb/day and 1.164 lb/year. These increases are considered neglible and are not an emissions increase.

Post 1991 Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	3.292	0.000	3.292

Toxic Risk Screening:

There is a neglible increase in toxic air contaminant emissions associated with this application. The maximum emissions increase of carbon tetrachloride is less than the carbon tetrachloride acute and chronic trigger levels of 4.2 lb/hour and 2.5 lb/year. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

STATEMENT OF COMPLIANCE

The owner/operator of S-680 and S-681 shall continue to comply with condition 14354. This condition limits throughput at S-680 and requires loading and unloading operations to be abated by A-191 vapor balance system. The proposed changes to condition 14354 are shown below.

S-680 is expected to continue to comply with Regulation 8, Rule 5 requirements for organic liquid storage tanks.

S-680 and S-681 is expected to continue to comply with Regulation 8, Rule 6, Section 304 requirements for deliveries to storage tanks.

The change of conditions to condition 14354 requires a minor revision to the Title V permit that will be processed with the Title V renewal Application No. 18262. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

2-6-226 Significant Permit Revision: Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:
226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:
4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or
4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project (See NSPS discussion below.) The NESHAPs general provisions under 63.41 do not have a definition for modification. The NESHAPs discuss reconstruction of a major source of HAPs. The facility has current actual emissions below the major source thresholds and permit condition No. 24004 that limits these emissions. The project will not change the facility status when compared to major source

thresholds for HAP and therefore should not be considered a modification under the NESHAPs. In addition, the project is not subject to any MACT requirements. The project does not change or relax existing monitoring, reporting, or recordkeeping requirements. The project does not involve a change to a permit term or condition allowing a facility to avoid an applicable requirements. The project does not establish or change a case by case determination of any emission limit or standard which may apply if a project increases emissions above the major source thresholds for HAP. The project does not involve changes described in 2-6-226.6 or 2-6-226.7.

The California Environmental Quality Act (CEQA):
The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 4.0)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the “no net emission increase” provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:
11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff’s health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10^{-6}) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT, because the increase in POC emissions is neglible and is less than 10 lb/day.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. The POC emissions increase is neglible (less than 0.001 ton/year) and no POC offsets are required.

NSPS

There is no NSPS that applies to S-680 or S-681.

40 CFR 60 Subpart Kb does not apply since S-680 is a pressure tank meeting the exemption requirements contained in 60.110(b). This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

S-680 has a capacity greater than 75 m3 but less than 151 m3 and is storing a liquid with a maximum true vapor pressure less than 15.0 kPa. The vapor pressure for carbon tetrachloride is 11.94 KPa at 20 deg. C. The volume of S-680 is 25,000 gallons (94.6 m3).

NESHAP

There is no NESHAP that applies to S-680 or S-681.

PSD does not apply to this specific permit application.

PERMIT CONDITIONS

COND# 14354 ----------

Application 16743, 16468, 23934
Conditions for S-680, Pressure Tank, T-440
S-681, Truck Transfer
A-191, Carbon Tetrachloride Tank Truck Loading Vapor Return
Line:

1. The total carbon tetrachloride throughput for S-680 shall not exceed 5,669 gallons (74,720 pounds) during any consecutive 12-month period, except during tank interior inspections or in case of an emergency repair.
(Basis: Cumulative Increase)

2. The total combined number of unloading (transfer) events at S-680 shall not exceed 5 during any calendar year.

During tank interior inspection period and in case of an emergency repair, the maximum number of transfers to empty or refill S-680 shall not exceed 5 in any one day, and the total number of

transfers to empty and refill S-680 shall not exceed 20 for the event. The owner/operator shall only be allowed to perform one tank interior inspection event in a calender year.
(Basis: Cumulative Increase)

3. The owner/operator of S-680 shall maintain records of carbon tetrachloride throughput and the date and number of loading/unloading events in a District-approved log. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.
(Basis: Cumulative Increase, BAAQMD Regulation 2-6-501)

Conditions for S-681, Truck Transfer:

4. S-681 Carbon Tetrachloride Tank Truck Transfer Operation shall be abated by A-191 Vapor Balance System whenever carbon tetrachloride is being transferred from S-680 Storage Tank to tank truck, or vice versa.
(Basis: Cumulative Increase, BAAQMD Regulation 8-6-302.1)

5. During all loading/unloading events at S-681, the operator shall confirm that the vapor return line is properly connected. The operator shall also verify that there is a leak tight connection to the tank truck.
(Basis: BAAQMD Regulation 8-6-302, BAAQMD Regulation 8-6-304, BAAQMD Regulation 8-6-305, BAAQMD Regulation 8-6-306)

6. The owner/operator shall maintain records for all Loading/unloading events, including the date, and verification of leak tight connection to the tank truck. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-302, BAAQMD Regulation 8-6-304, BAAQMD Regulation 8-6-305, BAAQMD Regulation 8-6-306)

RECOMMENDATION

Please approve the change of conditions to condition 14354 shown above. Condition 14354 is applicable to the following sources.

S-680 T-440 Pressure Vessel Storage Tank
Pressure tank, 25K gal, White, Carbon tetrachloride, 10 ft diam

S-681 Truck Transfer
Truck, Carbon tetrachloride, Part splash, part submerged fill

EXEMPTIONS
None.

By:_____ Date:_____
Brian Lusher
Senior Air Quality Engineer