Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
Minor Revisions
to the
MAJOR FACILITY REVIEW PERMIT

for

Corteva Agriscience
Facility #A0031

Facility Address:
901 Loveridge Road
Pittsburg, CA 94565

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February 2020

Applications 26078, 26663, 28556, & 29321

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Title V Statement of Basis
MFR Permit: Minor Revision

Corteva Agriscience – Pittsburg Operations; Site # A0031 (Plant # 24380)

APPLICATION #26078

A. Background

Corteva Agriscience – Pittsburg Operations, or Corteva Agriscience, owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California. It was previously known as Dow Chemical Company, or "Dow". 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, more than:

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

The main purpose of this current action is to make minor MFR permit revisions pursuant to new source review permit applications: 26077, 26661, 28555, 28034 and 29320 and the associated Title V permit applications: 26078, 26663, 28556, and 29321. Each set of applications is described below.

Application #26077; Title V Application #26078
Facility requested a throughput increase in the MEI plant. No physical changes or changes in the operation of the process occurred. Facility did not exceed its permitted POCs emission levels under Condition # 4780 for sources S-593 through S-596. Although the project resulted in toxic emission increases, the proposed toxic emissions did not exceed the levels evaluated under a previous HRA for these operations, performed under A/N 25436. A new HRA was not required.

Application #26661; Title V Application #26663
The facility requested a change in the formulation for S-718 nitrapyrin plant, component increase and a change to various process vessels in the production of this product. The facility also requested a change of service to tanks that would be exempt sources.

Application # 28555; Title V Application #28556
The facility requested a change in the formulation of a fourth product from S-718 nitrapyrin plant. The change was using an encapsulated product that was of the same composition as the other component in liquid form. No increase in emissions.

Application #28034;

The facility requested a replacement of two abatement devices that had reached their end of life. Both replacement devices will be almost identical to the equipment they are replacing. The new devices will have the same internal dimensions, and the same types of internal components, the same control efficiency, and the same packing type (fiber re-enforced polymer resin). The facility did not submit a Title V application for this change. However, the changes in device descriptions are administrative in nature and are being incorporated into this minor revision action.

Application #29320; Title V Application #29321
The facility requested permitting for a new emergency diesel engine S-800. This is a minor revision. The application has a detailed SOB in appendix 1 of the evaluation.

This document will discuss the proposed minor revisions to the Title V permit. The engineering evaluations for these applications are enclosed in Appendices B-F. These engineering evaluations contain detailed discussions of the proposed permit revisions. The proposed permit shows all changes to the existing permit in strikeout/underline format. The permit will be formally re-issued after EPA's 45-day review period is complete.

B. Facility Description

The facility currently manufactures agricultural products and intermediates, Dowicil® antimicrobials for use in paints and cosmetics, and hydrochloric acid. The manufacturing site is an integrated chemical plant utilizing chlorine, anhydrous hydrogen fluoride, potassium fluoride, methyl pyridine and dichloropropene in reactions to produce the various products.

The equipment utilized at the facility 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 facility are methylene chloride and Freon 22.

C. Permit Content

Since Statements of Basis were prepared for the initial MFR Permit and the January 15, 2016 Title V Renewal that fully describe and explain the legal and factual basis for the MFR Permit, this report will only address the proposed revisions to the MFR Permit associated with Application #s (26077, 26661, 28034, 28555 and 29320) and the proposed administrative amendments that are necessary to correct errors and update citations. Changes to the permit sections are described in the order that they are presented in the permit.

District permit applications not included in this proposed permit
This facility sends numerous permit applications to the District every year. The following permit applications are under review or were not completed in time to include the results in this Title V permit. 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
30035 NSR, 30036 TV (minor rev.)	Storage Tanks and adding solid material
30044 NSR	Replacement of process tank at S-446
30148 NSR	Replacement of abatement device

Changes to Title Page:

- Address change and phone number for the Air District
- Company name change for facility from Dow Chemical Company to Corteva Agriscience
- Name change of Responsible Official from Balaji Venkataraman to Jose A. Carrascal
- Name change of Contact Engineer from Brian Lusher to Irma Salinas

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. 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, Section I: Stanard Conditions

A. Administrative Requirements

- Update regulatory amendment dates in Section I.A.
- Clarify these standard conditions by striking out phrases (to contain) in Section I.B.8, adding words (of) to Section I.B.12.
- Revise Section I.F to include email address and correct mailing address for Air District.
- Revise Section I.G to include email address for EPA.
- Correct a typo in Section I.H.2.

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 more than 2 tons per year of a "regulated air pollutant," as defined in BAAQMD Rule

2-6-222, or 400 pounds per year of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210.

All abatement (control) devices that control permitted or significant sources are listed in Table II-B. 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 a source (or "S").

The equipment section is considered 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.

The following are explanations of the differences in the equipment list between the Title V Permit renewal that was issued in January 2016 and the proposed Title V permit revisions:

Changes to the Permit, Section II:

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

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
S-733 (T-216) Mixing Tank, 11,500 gallons
S-800 Emergency Diesel Engine; 2016 Cummins Model QSB5-G6, 208 BHP; 1.41 MM BTU/hour

Devices with Changed Permit Status:

S-726 (T-112) Indopol H-15 organic storage tank 8,800 gallons – exempt per per 2-1-123.3.2
S-735 (T-751) Proxel Tote, 376 gallon – exempt per 2-1-123.3.2
S-733 (T-216) Product Check Tank to S-733 (T-216) Mixing Tank 11,500 gallons as this is now part of the production line

Exempt sources added to Table II-A of the Title V permit:

S-726 (T-112) Indopol H-15 organic storage tank 8,800 gallons
S-735 (T-751) Proxel Tote, 375 gallons (2 totes)
S-736 (Indopol H-15) Tote, 375 gallons (4 totes)
S-737 (Antifoam C tote) 375 gallons (2 totes)
S-738 (Antifoam 100) 375 gallons (2 totes)

Abatement Devices added to Table II-B of the Title V permit:

A-410 (B-16 Caustic Scrubber) packed bed scrubber abates S-336 A-21 upstream
A-412 (B-501 Acid Absorber packed bed scrubber) abates S-389

Abatement Devices removed from Table II-B of the Title V permit:

A-72 (B-16 Caustic Scrubber) packed bed scrubber abates S-336 A-21 upstream
A-94 (B-501 Acid Absorber packed bed scrubber) abates S-389

Other Changes to Table II-B of the Title V permit:

Source for A-74: changed abated by A-94 to A-412

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.

Portable equipment operating in accordance with the ARB portable equipment registration program and temporary equipment such as sandblasting equipment may be operated at the facility provided that the source is not significant pursuant to Rule 2-6-239. Otherwise the significant source would need to be included in the Title V permit.

Changes to the permit:

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

Section III Generally Applicable Requirements

Changes to this section are the following:

Added language for unpermited sources are exempt under Regulation 2-6-239.

Added language for portable equipment operating in accordaince with ARB portable equipment registration program.

Removed address of SIP requirements of Region 9's website, and provided new link address: Then made changes to Table III 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.
Corrected Date for BAAQMD Regulation 2, Rule 1	General Requirements 12/6/17
Corrected date for SIP Reg 2 Rule 1	General Requirements 5/21/18
Corrected date for BAAQMD Regulation 5	Open Burning 11/20/19
Added BAAQMD Regulation 6	Particulate Matter - Common Definitions and Test Methods
Corrected Date for BAAQMD Regulation 6 Rule 1	Particulate Matter - General Requirements 8/1/18
Corrected Federal Enforceability to N for BAAQMD Regulation 8 Rule 47	Organic Compounds - Air Stripping and Soil Vapor Extraction Operations 6/15/05
Added BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide 3/1/95
Added SIP Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide 6/8/99
Added BAAQMD Regulation 11 Rule 18	Hazardous Pollutants - Reduction of Risk from Air Toxic Emissions at Existing Facilities 11/15/17
Added BAAQMD Regulation 14, Rule 1	Mobile Source Emission Reduction Methods - Bay Area Commuter Benefits Program 3/19/14
Corrected date for EPA Regulation 40 CFR 82	Protection of Stratospheric Ozone 12/1/16

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 permit conditions included in the facility's District permits to operate, which are found in Section VI of the Title V 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.

Changes to the permit:

Section IV of the permit contains citations to all the applicable requirements for the 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 a new table inserted into the permit. The tables are identified by a letter identifier from the existing permit. The new inserted table is identified as Table IV-CO. Table IV-CK was used twice. All subsequent tables have been renumbered to account for this error.

Changes to this section are the following:

Table IV-W
Changed the Abatement device in header from A-72 to A-410

Table IV-X

Changed the Abatement device in header from A-94 to A-412 and removed unnecessary language from the header

Table IV-AW
Added Part 13 to Condition # 4780, which includes a new limit on handling of product by tank truck loading.

Table IV-AX
Expanded the description of Condition # 4780 Part 13 to include tank truck limits.

Table IV-BZ
Table IV-BZ was revised to modify Condition # 24763, Parts 1 and 9.

Table IV-CA
Removed S-726 (T-112) Emulsion Storage from heading: now an exempt source.
Modified S-733 (T-216): changed description to "Mixing Tank".
Removed S-735 (T-751) Proxell Tote: now an exempt source.

Table IV-CK, IV-CL, IV-CM, and IV-CN
Table number IV-CK was used twice (see pages 167 and 168 of the draft Title V permit). The second Table IV-CK (for sources S-706, S-707, S-708, S-709, and S-711) was renumbered as Table IV-CL. Subsequent tables were also renumbered.

Table IV-CO
Added this new table for a new source: S-800 Diesel Engine Backup Generator and included all applicable requirements and Condition # 22850. See NSR Application # 29320 for details.

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.

For sources impacted by this minor revision, 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 may be 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.

If the basis for a specific limit or requirement is not clear, the District has cited 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.

For sources affected by this minor revision, additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

Changes to Permit, Section VI:

Permit condition formatting was corrected throughout Section VI.

Condition # 2039 was modified as follows:

- Added Application # 28034 to the list of applications that have modified this condition.
- Replaced A-94 Acid Absorber with A-412 Acid Absorber in the list of applicable devices and in Part 3.

Condition # 3500 was modified as follows:

- Repetitive text regarding the site name was deleted.

Condition # 4780 was modified as follows:

- Added Application # 26077 to the list of applications that have modified this condition.
- In Part 11, the rail car shipment limit was increased to 562 cars per 12-month period.
- In Part 13, added a new limit on the number of tank truck trips per 12-month period.
- In Part 16, added subpart g to include a new record keeping requirement for the tank truck trips at the MEI Plant 640.

Condition #6859 was modified as follows: to replace A-72 with A-410 caustic scrubber.

- Added Application # 28034 to the list of applications that have modified this condition.
- Replaced A-72 Caustic Scrubber with A-410 Caustic Scrubber in the list of applicable devices and in Parts 2 and 9.

Condition #8894 was revised as follows:

- Obsolete text was deleted from Part 12.

Condition #22850 was revised as follows:

- This is an existing template condition that applies to diesel engines at many facilities. S-800 was added to the list of applicable sources for this facility.

Condition #24763, which regulates S-718 Nitrapyrin plant, has been modified as follows:

- Deleted plant number from the heading.
- In Part 1, added Applications # 26661 and # 28555 to the list of applications that have modified this condition.
- In Part 2, increased the maximum component counts for valves, connectors, pumps, and pressure relief devices.
- Added a new Part 9 to include new limits on rail car shipments and truck trips related to the Nitrapyrin Formulation Plant 540. Added a new record keeping requirement to demonstrate compliance with these limits.

Condition #24779 has been modified as follows:

- Deleted plant number from the heading.

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.

Changes to Permit, Section VII:

Table VII-S and all subsequent Section VII table designations:

- Changed the table's letter designation in Section VII to match the table's letter designation in Section IV. For example, Table IV-U applies to S-323, S-324, S-535, and S-336. Table VII-S applies to this same group of sources and was relabled as Table VII-U for consistency and readability. Note that some devices may not have any specific applicable limits. Therefore, not every table in Section IV will have a corresponding table in Section VII. If there are specific limits for a device, it will have the same letter designtation in both Sections IV and VII.

Table VII-W

- Changed A-72 to A-410 throughput this table.

Table VII-X
- Changed A-94 to A-412 throughput this table.

Table VII-AW
- Updated the Condition # 4780, Part 11 limit on the number of rail car shipments.

Table VII-AX
- Added the new Condition # 4780, Part 13 limit on the number of truck trips.

Table VII-BZ
- Added the missing limits on the number of components from Condition # 24763, Part 2.
- Added the missing leak limits for valves, connectors, and pumps from Condition # 24763, Parts 3-5.
- Added the missing daily POC emission limit from Condition # 24763, Part 7.
- Added the new limits on the number of rail car shipments and truck trips from Condition # 24763, Part 9 and included the proposed new record keeping requirement that is necessary for demonstrating compliance with these limits.

In Preamble for Table VII-CG (Sources Subject to 40 CFR Part 63, Subpart NNNNN)
- Changed abatement devise citation for A-72 to A-410.

Table VII-CO
- Added this new table to include requirements for S-800.

Section VIII Test Methods - no changes

Section IX Permit Shield - no changes

X. Revision History

All permit changes for these minor revision applications are described in Section X.

D. Alternate Operating Scenarios

No alternate operating scenario has been requested for this facility.

APPENDIX A

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 formerly 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
≤	=	less than or equal to
≥	=	greater than or equal to

APPENDIX B

ENGINEERING EVALUATION AN 26077

Facility requested a throughput increase in the MEI plant. No physical changes or changes in the operation of the process occurred. Facility did not exceed its permitted POCs emission levels under condition 4780 for sources S-593 through S-596. There was an increase in toxic air contaminants, but the previous HRA performed under A/N 25436 was below the toxic emissions increase from this change. No HRA was required.

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 26077

BACKGROUND

Dow Chemical Company (Dow) has applied for an increase in throughput (change of conditions) at the MEI plant. [redacted] The sources affected by the throughput increase in the MEI plant consists of the following:

S-593, Plant 640, Section 1
S-594, Plant 640, Section 2
S-595, Plant 640, Section 3
S-596, Plant 640, Section 4
S-604, Truck Loading Facility Plant 640;
S-607, T-1904 Plant 640 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-206, ME-3220 Backup Carbon Adsorber
S-336, Manufacturing Services Halogen Acid Furnace

The confidential throughput of MEI is increasing from [redacted] per year. There are no physical changes or changes in the method of operation other than the increase in permitted throughput of these sources. The throughput increase would be accomplished through optimization of controls and operations. This throughput increase results in an increase of criteria pollutant emissions from the rail car operations going from 345 to 562 rail cars per year at the MEI plant. There is no increase above the permitted emission level for POC's from the MEI plant under condition # 4780 for sources S-593 through S-596; nor are there emission increases for POC's for the fugitive emissions that are subject to condition # 25671. There is a small increase in toxic air contaminant emissions associated with the increase in throughput at the MEI plant however these increases are below the risk screen analysis that was performed under A/N 25436. Therefore, no risk analysis was required.

EMISSIONS SUMMARY- Please see the attached emission calculations in Appendix A.

The POC emissions from the process vents are limited by condition 4780 to 8 lbs/day. The fugitive emissions of Regulation 8, Rule 18 monitored components are limited to 3.7 tons/year (based on original permit application 4128). The current request to increase throughput at the MEI plant will not increase POC above the permitted limited per condition 25671.

The throughput increase will increase TAC emissions at the process vents at the MEI plant. The MEI plant also emits toxic air contaminants from fugitive components and all toxic air contaminant emissions

were considered in the Health Risk Screening Analysis prepared under A/N 25436. Emissions for carbon tetrachloride were based on 3.57 lbs/yr and from the spreadsheet provided; the facility believes that emissions will not exceed 3.52 lbs/yr at the MEI plant. Thus no risk analysis is required as emissions have already been calculated under A/N 25436.

After the throughput increase at the MEI plant, the secondary emissions of HCl from S-336 halogen acid furnace could increase. The health risk screening analysis prepared under the previous application to modify the MEI plant (A14456) had these emissions estimated at 0.0022 lbs/day and 0.788 lbs/year. The secondary HCl emissions were modeled at 107 lbs/year after abatement in A/N 25436. Emissions from the throughput increase from this application are estimated to be 0.39 lbs/yr after abatement. This value is much less than the 350 lb/yr in Table 2-5-1. Thus no risk analysis was required for the secondary emissions of HCL from this facility. Also please note that the risk analysis performed under A/N 25436 was based on HCL emissions at 107 lbs/yr.

The facility has estimated the emissions increase due to increasing the number of rail cars allowed under condition 4780 from 345 to 562 rail cars per year. The emission calculations for the rail cars are included in Appendix A. The emissions increase from the increase in rail cars is shown below:

Increased Rail Car Emissions		
Compound	Lbm/yr	Tons/yr
NOX	301.33	0.151
CO	37.69	0.019
POC	8.90	0.004
PM10	6.09	0.003
SOx	20.84	0.010

Post 1991 Plant Cumulative Increase: (tons/year)

Rail car emissions are included in the definition of facility per 2-2-215. The emissions of trucks (on road vehicles) are not included. In addition, no increase in truck traffic is expected to occur as the facility did not request an increase. Per A/N 25436 truck trips will remain at 256 per year.

Pollutant	Application Emissions Increase (TPY)	Final Cumulative Increase (TPY)
NOX	0.151	0.151
CO	0.019	0.019
POC	0.004	0.004
PM10	0.003	0.003
SOX	0.010	0.010

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions

All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance. The proposed modification has very low particulate emissions and is not expected to be a source of public nuisance.

Regulation 2, Rule 1: CEQA Requirements

The project is exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will remain below permitted levels for POCs. Additional railcar emissions are very small 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 (See Appendix H) 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)

A notice of exemption (NOE) has been prepared for this facility and will be submitted to the County Clerk's office.

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project. In addition, from the District's databank program, a search for schools within 0.5 miles of the facility was performed, and the results shown below show that there is no school.

This program lists schools within a specified radius of a plant or
UTM coordinates. The distances calculated are between UTM coordinates and do not account for the outer boundaries of the plant nor the schools.

Enter Plant number, [U] for UTMs, or [E] to end: 31
Select units for search radius [M]iles, [K]ilometers : m
Enter desired radius: .5

Search parameters are for:
P#31, Dow Chemical Company
(UTM_E = 600.530, UTM_N = 4209.110)

Search radius within: .50 miles
Do you want to continue? [Y/N]: y

Total number of Schools: 0

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)
Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT*)*.

There is no increase in POC emissions from the MEI plant sources above permitted levels. The increase in cargo carrier emissions (rail, trucks) is not subject to BACT requirements per 2-2-206.

The facility has a permit condition #4780 part 1 that does not allow them to emit more than 8 lbs/day of POCs averaged over each calendar month.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)
Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. Since the facility emissions of POC and NOx are greater than 10 tons/yr, the MEI plant is subject to the offset requirements of *Regulation 2-2-302*. Offsets will be provided at a ratio of 1.15:1. Dow has a certificate number 1280 for (12.827 tons/yr of POCs)

POCs (0.004 X1.15) = 0.0046 tons/yr
NOX (0.151 X1.15) =0.1737 tons/yr

Total offsets to be provided under Certificate # 1280 are (0.0046+0.1737) = 0.1783 tons/yr.

Regulation 2, Rule 2: Offset Requirements, PM_{10} and Sulfur Dioxide, (2-2-303)
Regulation 2-2-303 establishes emission offset requirements for PM10 and Sulfur Dioxide from new or modified sources located at a Major Facility. This plant is a Major Facility, however emissions of PM10 are less than 100 tons/yr and therefore the facility is not subject to the offset requirements of *Regulation* 2-2-303.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304-309 or 315)
Regulations 2-2-304 through 309 and 2-2-315 apply to new major facilities or a modification of a major facility. Dow is an existing major facility; however this application does not qualify as a major modification; so PSD is not applicable.

The facility is subject to Regulation 2-2-317 (Maximum Achievable Control Technology) because site-wide HAP emissions may exceed 10 tons/year for any single HAP nor 25 tons/year for all HAPs combined.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
The only Toxic Air Contaminant exceeding the limits listed on Table 2-5-1 from this facility is carbon tetrachloride. A risk screen analysis was performed under A/N 25436, and the facility is not increasing its

emissions above the emission level from the prior risk analysis. Therefore, the facility did not require a new risk analysis.

Major Facility Review, Regulation 2, Rule 6
This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit more than 100 tons per year of any regulated air pollutant (POC and CO). The requirements of this program have been codified in District Regulation 2, Rule 6.

The facility was issued the initial Title V permit on December 1, 2003. The most recent renewal for this facility was January 15, 2016. This project will trigger a minor revision of the Title V permit. It will be processed in a separate application.

Regulation 8 Rule 2 - Miscellaneous Operations
For sources S-593 through S-595, facility is and will continue to be in compliance with Regulation 8-2-301 as emissions into atmosphere will not exceed the 15 lbs/day limit and contain a concentration of more than 300 ppm total carbon on a dry basis.

Regulation 8 Rule 5- Storage of Organic Liquids
Facility will remain in compliance with this Regulation for source S-607 (T-1904) 8000 gallon pressure tank. Facility will comply with Regulation 8, Rule 5 Section 305.

Regulation 8 Rule 18- Equipment Leaks
Facility is in compliance with this regulation as it applies to leaks from connections, compressors and pressure relief devices, and valves.

Regulation 8 Rule 22 – Valves and Flanges at Chemical Plants
The facility is not subject to Regulation 8 Rule 22 because they have more than 100 valves and are only subject to Regulation 8 Rule 18.

Federal Requirements:

NSPS Requirements
40 CFR Part 60 (Subpart Kb) is not applicable as the vapor pressure of these compounds in storage tanks are less than 0.51 psia.

NESHAP
Dow is currently not subject to 40 CFR Part 63, Subpart F, Subpart G; Subpart H; I; Subpart OO (not applicable because not subject to 40 CFR Part 60), Subpart EEEE, and Subpart VVVVVV (no compounds listed in Table 1). Dow is subject to Subpart FFFF as it has requirements for process vents, storage vessels, and transfer operations.

PERMIT CONDITIONS

The MEI plant is subject to condition 4780. The changes to this condition are shown in strikethrough/underline format.

Condition 25671 limits fugitive emissions from accessible Regulation 8-18 components (including those that are not required to be monitored under Regulation 8-18) to less than 3.7 tons/year of POC. No changes to this condition resulted from this application, thus it is not included below.

COND# 4780----------

Applications 4128, 16468, 8894, 14456, 25436, 26077
Permit Conditions for Sources
S-593, Plant 640, Section 1
S-594, Plant 640, Section 2
S-595, Plant 640, Section 3
S-596, Plant 640, Section 4
S-604, Truck Loading Facility Plant 640; S-607, T-1904 Plant 640 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-206, ME-3220 Backup Carbon Adsorber
S-336, Manufacturing Services Halogen Acid Furnace

1. The owner/operator shall ensure that the combined emissions of precursor organic compounds (POC) to the atmosphere from the MEI Plant 640 (S-593, S-594, S-595, S-596) do not exceed 8 pounds per day, averaged over each calendar month.
(Basis: Cumulative Increase)

*2. The owner/operator shall ensure that the combined emissions of 4-amino-3,5 dichloro-2,6 difluoro pyridine to the atmosphere from the MEI Plant 640 do not exceed 0.02 pounds on any day. (Basis: Regulation 2, Rule 5)

*3. The owner/operator shall ensure that the combined ammonia emissions to the atmosphere from the MEI Plant 640 do not exceed 0.02 pounds on any day and that the exhaust concentration does not exceed 200 ppm.
(Basis: Regulation 2, Rule 5)

4. Deleted.

*5. If any source test conducted for this plant identifies the emission of any compound not identified in the below listing, then the owner/operator shall submit a either a revised Risk Screening Analysis or sufficient information to indicate that emissions of the new compound are less than the applicable trigger levels listed in Regulation 2, Rule 5, Table 2-5-1:
Methyl Chloroacetate (MCA)

4-amino-3,5 dichloro-2,6 difluoropyridine
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
Methylene Chloride
Vinyl Chloride
1,1 Dichloroethylene
(Basis: BAAQMD Regulation 2, Rule 5)

6. The owner/operator shall ensure that the there 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, Regulation 2, Rule 5)

7. Deleted.

8. Deleted.

9. Deleted.

10. Deleted.

11. The owner/operator shall ensure that total rail car shipments for the MEI Plant 640 (S-593, S-594, S-595, and S-596) do not exceed ~~345~~562 cars per consecutive 12-month period. (Basis: Cumulative Increase)

*12 The owner/operator shall ensure that MEI Plant 640 (S-593, S-594, S 595, and S-596) does not cause 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 the all materials handled at Tank Truck Loading source S-604 are not spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere. Tank truck trips shall not exceed 256 per consecutive 12- month period. (Basis: Cumulative Increase, Regulation 2, Rule 5)

14. The owner/operator shall ensure that the MEI Plant 640 (S-593, S-594, S-595, and S-596) product (herbicide intermediate) is loaded only in solid form, with sufficient moisture present to prevent visible emissions and odors from occurring at the loading site. (Basis: Regulation 2, Rule 5, 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 shall maintain the following records:
    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, or A-206;
    c. Records of the number of hours that the emissions from A-147 and/or A-149 are vented to A-206, summed each month for the previous 12-month period;
    d. A summary of the hours of A-206 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-206 for each day of use until carbon changeout;
    e. Records of all source tests performed to demonstrate compliance with Parts 1, 2, 3, and 5; upon receipt of the startup source test results for the Phase II modifications to the MEI Plant 640, the records must also include a POC emission factor derived from the source test to be used for compliance calculations until the subsequent source test;
    f. Effective after receipt of the startup source test results for the Phase II modifications to the MEI Plant 640: 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.

g. The number of tank truck trips received for materials to be used at the MEI Plant 640. Totaled each month for the previous 12-month period.

(Basis: Cumulative Increase, BAAQMD Regulation 2-6-501)

17. The owner/operator shall ensure that the A-147 Scrubber abates S-593, S-594, S-596, and S-607 at all times each source is operating. The owner/operator shall ensure that the A-149 Scrubber abates S-595 at all times S-595 is generating ammonia emissions. (Basis: Cumulative Increase)

18. To demonstrate compliance with the emission limits in Parts 1, 2 and 5 the owner/operator shall perform a District-approved source test to measure the combined POC, organic toxic air contaminants, and ammonia 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 source test results shall be used to determine emission factors to be used to demonstrate compliance in parts 1, 2, and 3. 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. Within 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)

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 by A-149. The owner/ operator shall ensure that the emissions from A-147 and A-149 are further abated at either S-336, or at the Backup Carbon Adsorber, A-206. (Basis: Cumulative Increase)

20. Beginning with the source test performed after startup of the Phase II modifications to the MEI Plant 640 (required by Part 18 above) and for every subsequent

source test, 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
b.90% by weight for the periods that the A-147/A-149 vents were directed to A-206.
(Basis: Cumulative Increase)

21. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that the A-206 Backup Carbon Adsorber is equipped with at least 1800 pounds of activated carbon whenever A-206 is in use.
(Basis: BAAQMD Regulation 2-1-301)

22. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that use of A-206 to abate the emissions from A-147 or A-149 does not exceed 1,440 hours in any consecutive 12-month period. (Basis: Cumulative Increase)

23. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that 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 must either changeout the carbon bed or monitor abatement efficiency each day A-206 is in use by measuring both the inlet and outlet organic compound concentrations. The owner/ operator must install fresh carbon in A-206 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 shall be abated at the in-line spare carbon bed or at S-336.
(Basis: Cumulative Increase)

24. Within 45 days of startup of the Phase II modifications

to the MEI Plant 640, the owner/operator shall provide a final valve, flange, pump, and other component count for the modified MEI Plant 640 (S-593, S-594, S-595, S-596). This submittal shall also include revised fugitive emission calculations for the MEI Plant 640 based on the final component count.
(Basis: Cumulative Increase)

RECOMMENDATION

Recommend approving a change of conditions for the following equipment:

S-593, Plant 640, Section 1
S-594, Plant 640, Section 2
S-595, Plant 640, Section 3
S-596, Plant 640, Section 4
S-604, Truck Loading Facility Plant 640; S-607, T-1904 Plant 640 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-206, ME-3220 Backup Carbon Adsorber
S-336, Manufacturing Services Halogen Acid Furnace

EXEMPTIONS -None

By:_____ Date:_____
Irma Salinas
Senior Air Quality Engineer

APPENDIX A- CALCULATIONS

Public Version

Process Emission Calculations Based on Source Test

Railcar Emissions Calculation

Locomotive and Railcar Information

	Value	Units	Basis
Miles per car	50	mile/trip	BAAQMD's evaluation of the original 640-A permit application
Road service engine power	1	bhp/ton	640-A permit application submitted 2006
Switching service	0.6	bhp/ton	640-A permit application submitted 2006
Tare weight railcar	60,000	lb/railcar	
wt load in railcar	184,000	lb/railcar	
Trip time	1	hr/trip	Based on 50 mph average speed
Switching time per car	2	min per car	
Road load factor	0.4		640-A permit application submitted 2006
Switching load factor	0.06		640-A permit application submitted 2006
Mass per railcar	122	tons	Mass/railcar, ton = (tare weight, lb + wt load, lb) / 2000 lb/ton

Emission Factors

		Road Service (Short Haul)	Switching Service
CO	g/HP-hr	1.61	1.45
POC	g/HP-hr	0.38	0.44
NOx	g/HP-hr	12.86	15.82
PM	g/HP-hr	0.26	0.28
SOx	g/HP-hr	0.89	0.9

Data Source: Short-Haul and Switcher Emission rates from Booz-Allen Hamilton's Locomotive Emission Study report done in 1992. Quoted in CARB OffROAD Modeling Change Technical Memo by Walter Wong-March 05:

Ref: CARB, 2005. *OFFROAD Modeling Change Technical Memo,* Walter Wong, Table 13.

http://www.arb.ca.gov/msei/on-road/downloads/docs/Locomotive_Memo.doc

Railcar Emission Calculations

	Emission Factor	Pre-Project Emissions		Post-Project Emissions		Emission Increase	
	lb/car	lb/day	lb/year	lb/day	lb/year	lb/day	lb/year
CO emissions	0.174	0.164	59.92	0.347	97.61	0.183	37.69
HC emissions	0.041	0.039	14.15	0.082	23.06	0.043	8.90
NOx emissions	1.389	1.313	479.08	2.777	780.41	1.465	301.33
PM_{10} emissions	0.028	0.027	9.68	0.056	15.77	0.030	6.09
SO_2 emissions	0.096	0.091	33.13	0.192	53.97	0.101	20.84

Note:

1. Number of railcars	Railcars/year	Railcars/day
Current	345	1.0
Proposed	562	2.0

2. Calculations:

Emissions = Road service emissions + switching emissions

Road service emission (lb/railcar) = mass/railcar*road service engine power*road load factor*trip time*emission factor

Switching service emission (lb/railcar) = mass/railcar*road service engine power*road load factor*trip time*emission factor

Emission (lb/day) = number of cars per day*emissions per railcar

Emission (lb/year) = number of cars per year*emissions per railcar

[redacted]

APPENDIX C

ENGINEERING EVALUATION AN 26661

The facility requested a change in the formulation for S-718 nitrapyrin plant, component increase and a change to various process vessels in the production of this product. The facility also requested a change of service to tanks that would be exempt sources.

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 26661

BACKGROUND

Dow Chemical Company (Dow), has applied for changes in the operation of their facility for the following items:

- Formulation change- variation from 1 single product to 4 different products
- Component increase for nitrapyrin formulation plant S-718
- Changes to various process vessels in the production formulation of this product
- Change of service for S-726 Emulsion tank to Storage tank for Indopol
- Certificate of Exempt sources for various storage tote vessels each having a capacity of more than 250 gallons per year but less than 400 gallons- meeting exemption per Regulation 2-1-123.2
- Source S-735(T-751) Proxel Tote from permitted to exempt status
- Source S-733(T-216) change status from exempt to permitted source.

The agricultural product that is produced at this plant is called Nitrapyrin nitrogen stabilizer and it 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 formulation change will result in three other formulations of the product however these other formulations will at most have 0.9% of naphthalene whereas the former has 14% naphthalene present in aromatic solvent. The alternative formulation will involve a higher operating temperature when it is introduced into source S-720 Organic Mixture 9000 gallon tank. The throughput will remain the same at the Nitrapyrin Formulation Plant. Note since the other three formulations will have a greatly reduced naphthalene content and the throughput of the formulation will not increase, no toxic emissions will be above the already permitted amount based on A/N 25438.

The facility is also requesting component increases for the nitrapyrin formulation plant known as source S-718. In addition, the facility is requesting that the following source S-726 (T-112) Emulsion Storage, 8,800 gallons tank be removed from service in this production line and be used as a storage tank for use of Indopol H-15 organic polymer. This will result in S-726 qualifying as an exempt source. No railcar trips will increase as the facility is not increasing throughput. Under A/N 25438, the facility increased throughput from [redacted] gallons to [redacted] gallons. As a result of this throughput increase, railcar trips increased to [redacted] rail cars per year and truck trips increased to [redacted] truck trips per year. As no increase in throughput has occurred, railcar and truck trips will remain the same. A condition limit will be included for the railcar and truck trips, as this was not included in A/N 25438.

Certificate of Exemption for the following totes per 2-1-123.2

S-738 (Antifoam 100) 375 gallons (2 totes)
And the facility is requesting Certificate of Exemptions for the following totes: per 2-1-123.3.2

S-726 (T-112) Indopol H-15 organic storage tank 8,800 gallons
S-735 (T-751) Proxel Tote, 375 gallons (2 totes)
S-736 (Indopol H-15) Tote, 375 gallons (4 totes)
S-737 (Antifoam C tote) 375 gallons (2 totes)

The Nitrapyrin plant consists of the following sources:

S-718 Nitrapyrin Formulation Plant
S-720 (T-310) Organic Mix, 9,000 gallons
S-725 (V-250) Aqueous Mix, 2,900 gallons
S-727 (T-11) Gel Phase Mix, 1,500 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
S-733 (T-216) Mixing Tank, 11,500 gallons

Change Status from permitted source to exempt Source

S-726 (T-112) Indopol H-15 organic storage tank 8,800 gallons – exempt per per 2-1-123.3.2
S-735 (T-751) Proxel Tote, 376 gallon – exempt per 2-1-123.3.2

And change status from exempt to permitted source along with description change:

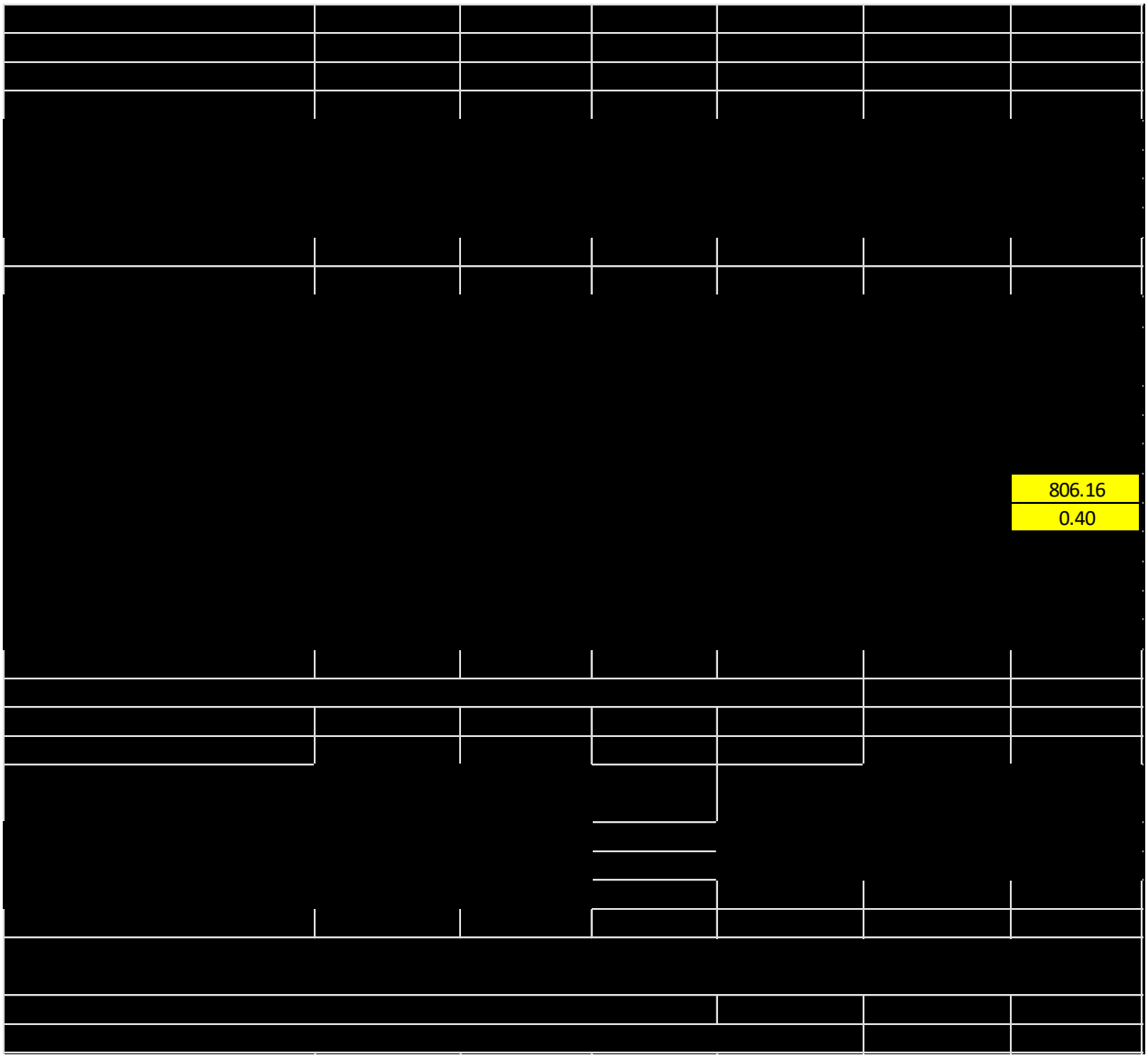
S-733 (T-216) Product Check Tank to S-733(T-216) Mixing Tank 11,500 gallons as this is now part of the production line.

Calculations

Increase in Component Count- no increase in allowed condition limit of 9.9 lbs/day or 1782 lbs/yr for POCs.

The fugitive component counts for the project are contained in the following Table.
Taken from A/N 25438. Fugitive POC emissions have been calculated by multiplying the derived emission factor for each component type by the projected number of each component. Fugitive emission factors were taken from monitoring report 2011-2012.

Components	Permitted A/N 25438	Proposed
Valves	599	1198
Connections (flanges, Connectors)	2286	4572
Pumps	23	31
PRD	24	48
Compressor	8	8



The POC and naphthalene emissions from the Nitrapyrin plant are mainly due to fugitive components. Emissions from fugitive components are remaining below permitted levels. In application 24429, the District approved of a schedule change that allowed the Nitrapyrin plant to operate 365 days/year. The fugitive emission limit for POC of 0.891 tons/year and the corresponding naphthalene emissions of 249.5 lb/year were not changed since the facility could continue to meet these limits. Dow has requested that the fugitive POC and corresponding naphthalene limit be maintained at the current permitted level; fugitive emissions are taken into account with permit condition limit of not to exceed 9.9 lbs/day or 1782 lbs/yr.

There is a small emissions increase in POC and naphthalene emissions associated with tanks (including vents to atmosphere) and also from loading and unloading of compounds. The small increases of POC associated with tank emissions will be offset.

Summary of Emissions from Loading and Storage Tanks:
Nitrapyrin Formulation Plant

540-A Criteria Emissions Summary

Annual Emissions Increase (ton/yr)	**Incremental Increase**				
Source	**POC**	**CO**	**NOx**	**PM**	**SO2**
540-A-1 Fugitives	--	--	--	--	--
Loading/Unloading Disconnect Emissions	0.006	--	--	--	--
Storage Tanks	0.060	--	--	--	--
Total	**0.066**	**--**	**--**	**--**	**--**

Daily Emissions Increase (lb/day)					
Source	**POC**	**CO**	**NOx**	**PM**	**SO2**
540-A-1 Fugitives	0.000	--	--	--	--
Loading/Unloading Disconnect Emissions	0.082	--	--	--	--
Storage Tanks	1.489	--	--	--	--
Total	**1.571**	**--**	**--**	**--**	**--**

Notes:
Daily emissions represent worst-case maximum daily emissions.

Note that source S-726 was previously a permitted source under A/N 25438, and now it is considered an exempt source. Emissions are reduced by 0.44 lbs/yr or 2.2E-4 tons/yr for POCs

POCs: 0.0603-2.2E-4 = 0.060 tons/yr

PLANT CUMULATIVE INCREASE (AFTER 4/5/91)

The cumulative increase for criteria pollutants resulting from the increase in this production plant :

Pollutant	**Pre-Existing Cumulative Increase (TPY)**	**Application Emissions Increase (TPY)**	**Final Cumulative Increase (TPY)**
POC	0.010	0.066	0.076
NOX	0.099	0.0	0.099

In A/N 25438, facility had stated that they were going to wait until renewal to provide offsets. Offsets will be provided with the same certificate under A/N 26661.

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions

All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance. The proposed modification has very low particulate emissions and is not expected to be a source of public nuisance.

Regulation 2, Rule 1 Exemptions

Exempt per 2-1-123.2 –Tanks, vessels and pumping equipment used exclusively for the storage or dispensing of any aqueous solution which contains less than 1% (wt) organic compounds.

The facility is requesting that this source be permitted as an exempt source. S-738 Antifoam 100, 375 gallon capacity 2 totes maximum. Source meets the criteria specified above.

Exempt per 2-1-123.3.2

All the exempt sources listed below meet the requirement of storage or loading of organic liquids or mixtures containing organic liquids where the initial boiling point of the organics is greater than 302^{o}F and exceeds the actual storage temperature by at least 180^{o}F.

For Source S-726 (112 Emulsion Storage Tank), the facility is now requesting to take this source out of the production line and use it to store a different material/compound (Indopol H-15). This compound meets the exemption criteria as stated in Regulation 2-1-123.2. Product description for this source has already been done in data bank.

S-735 Proxel tote is listed as a permitted storage tank in the District's records. The facility has requested that this source be changed from permitted to an exempt source, as it meets the criteria set forth above for being an exempt source. This application will change the status from permitted to exempt status.

The facility has also requested that three additional products used for storage of various compounds be listed as exempt sources. The District has labeled these exempt sources as S-736 Indopol H-15 tote, S-737 Antifoam C tote. These compounds meet the definition of exempt source per 2-1-123.3.2

Please note that Appendix A is attached and it includes a table stating that the boiling point of these compounds meets the requirements for these exemptions. Also included are the MSDS sheets for these compounds.

Regulation 2, Rule 1: CEQA Requirements

This 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 emission factors in accordance with Permit Handbook Chapter 3.4 Petroleum Refinery Fugitive Emissions and Chapter 4.0 Organic Liquid Storage Tanks.

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 (See Appendix H) 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)

A Notice of Exemption (NOE) will be filed with the Contra Costa County Clerk's Office prior to issuing the change of condition and exemption letters.

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project. In addition, from the District's databank program, a search for schools within 0.5 miles of the facility was performed, and the results shown below show that there is no school.

This program lists schools within a specified radius of a plant or
UTM coordinates. The distances calculated are between UTM coordinates and do not account for the outer boundaries of the plant nor the schools.

Enter Plant number, [U] for UTMs, or [E] to end: p
Invalid plant number, try again.

Enter Plant number, [U] for UTMs, or [E] to end: 31
Select units for search radius [M]iles, [K]ilometers : m
Enter desired radius: .5

Search parameters are for:
P#31, Dow Chemical Company
(UTM_E = 600.530, UTM_N = 4209.110)
Search radius within: .50 miles
Do you want to continue? [Y/N]: y

Total number of Schools: 0

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)

Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT). The facility has a permit condition #24763 part 7 that does not allow them to emit more than 9.9 lbs/day of POCs or 1782 lbs/yr of POCs. Therefore, the facility is not subject to BACT

requirements for fugitive components. Emissions from tank reformulation are minimal and will not exceed the 10 lbs/day and not subject to BACT.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)
Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. Since the facility emissions of POC are greater than 10 tons/yr, the formulation plant is subject to the offset requirements of Regulation 2-2-302. Offsets will be provided at a ratio of 1.15:1. Dow has a certificate number 1280 for (12.827 tons/yr of POCs)

POCs (0.066 X1.15) = 0.076 tons/yr Current application
POCs (.010X 1.15) = 0.0115 tons/yr Under A/N 25438
NOX (0.099X1.15) =0.114 tons/yr Under A/N 25438 and A/N 25436

Total offsets to be provided under Certificate # 1280 are (0.076 + 0.0115 + 0.1139 =0.202 tons/yr. Dow had previously deferred offsets per 2-2-421 (Annual Permit Renewal).

Regulation 2, Rule 2: Offset Requirements, PM_{10} and Sulfur Dioxide, (2-2-303)
Regulation 2-2-303 establishes emission offset requirements for PM10 and Sulfur Dioxide from new or modified sources located at a Major Facility. This plant is a Major Facility, however emissions of PM10 are less than 100 tons/yr and therefore the facility is not subject to the offset requirements of Regulation 2-2-303.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304-309 or 315)
Regulations 2-2-304 through 309 and 2-2-315 apply to new major facilities or a modification of a major facility. Dow is an existing major facility; however this application does not qualify as a major modification; so PSD is not applicable.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology) because site-wide HAP emissions will not exceed 10 tons/year for any single HAP nor 25 tons/year for all HAPs combined.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
The only Toxic Air Contaminant listed on Table 2-5-1 emitted from this facility is naphthalene. Since a risk screen analysis was performed under A/N 25438, and the facility is not increasing its emissions above the risk analysis, no increase in toxics will occur and the facility did not require a risk analysis.

Major Facility Review, Regulation 2, Rule 6
This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit more than 100 tons per year of any regulated air pollutant (POC and CO). The requirements of this program have been codified in District Regulation 2, Rule 6.

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. The reduction in potential to emit is primarily due to shutdown of the combustion sources used to supply electricity and steam to the site. At the time of the initial Title V permit issuance, the potential to emit of hazardous air pollutants also exceeded the 10 tons per year of a single hazardous air pollutant and the 25 tons per year of aggregate hazardous air pollutants. Dow has voluntarily added emissions controls over the years to reduce hazardous air pollutants emissions.

The facility was issued the initial Title V permit on December 1, 2003. The permit has not undergone any revisions since issuance. The most recent renewal for this facility was November 30, 2008. This project will trigger a minor revision of the Title V permit. It will be processed in a separate application.

Regulation 8 Rule 2 - Miscellaneous Operations
Facility is and will continue to be in compliance with Regulation 8-2-301 as emissions into atmosphere will not exceed the 15 lbs/day limit and contain a concentration of more than 300 ppm total carbon on a dry basis.

Regulation 8 Rule 5- Storage of Organic Liquids
Facility will remain in compliance with this Regulation. Facility will comply with Regulation 8, Rule 5 Section 307 (Requirements for Fixed Roof Tanks, Pressure Tanks and Blanketed Tanks). Per section 8-5-117 (Limited Exemption, Low Vapor Pressure) all provisions of this rule, except for Section 8-5-307.3, shall not apply to tanks storing organic liquids with a true vapor pressure of less than or equal to 0.5 psia as determined by Sections 8-5-602 or 604. The facility has decided to change the use of tank S-733 (T-216) Product check tank to now be part of the production line of the Nitrapyrin plant and be used as a mixing tank prior to final product going to sources S-730 and S-731. Therefore, source S-733 is now part of the formulation plant and is required to be permitted. I have included a schematic of formulation plant (before and after). Tank S-733 is complying with Regulation 8 Rule 5. Emissions from S-733 have been included in this application.

Regulation 8 Rule 18- Equipment Leaks
Facility is in compliance with this regulation as it applies to leaks from connections, compressors and pressure relief devices, and valves.

Regulation 8 Rule 22 – Valves and Flanges at Chemical Plants
The facility is not subject to Regulation 8 Rule 22 because they have more than 100 valves and are only subject to Regulation 8 Rule 18.

Federal Requirements:

NSPS Requirements
40 CFR Part 60 NSPS not applicable as the vapor pressure of these compounds in storage tanks are less than 0.51 psia per Subpart Kb not applicable.

NESHAP
Dow currently has a facility wide condition that limits the emissions of hazardous air pollutants from the facility. This condition is expected to no longer be applicable after the Title V renewal is issued. Dow is currently not subject to 40 CFR Part 63, Subpart F, Subpart G; Subpart H; I; Subpart OO (not applicable because not subject to 40 CFR Part 60), Subpart EEEE, Subpart FFFF, Subpart VVVVVV (no

compounds listed in Table 1). Current condition that makes HAP less than 10 tons/year of a single pollutant is under condition # 24004. This condition was added to the District permit on May 7, 2008.

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, 24429, ~~and~~ 25438 and 26661. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in these Applications.
[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:

~~599~~1198 valves;
~~2286~~4572 connections (flanges, connectors);
~~23~~31 pumps;
~~24~~48 pressure relief devices;
8 compressor

[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. If the TOC concentration (as C1) measured at any component at the Nitrapyrin plant exceeds the concentration standards contained in parts 3 through 5, then the owner/operator shall estimate daily emissions from all Nitrapyrin fugitive components using a District approved method. The owner/operator shall continue to estimate daily emissions from all fugitive components at the Nitrapyrin plant until the leak rate of TOC (as C1) from each component at the Nitrapyrin plant is less than the concentration standards

contained in parts 3 through 5.

[Basis: 2-2-419, Cumulative Increase, Offsets]

8. The owner/operator shall calculate the fugitive emissions from all Nitrapyrin Plant components on a 12-month rolling average basis and a daily basis (as necessary) to demonstrate compliance with part 7 using District approved methodology. The owner/operator shall maintain monthly records of monitoring results, fugitive emission calculations, component counts, and unique permanent identification codes for each component. These records shall be maintained onsite for inspection by District staff for a period of 5 years.

[Basis: 2-2-419, Cumulative Increase, Offsets, Recordkeeping]

9. The owner/operator shall ensure that total rail car shipments for the Nitrapyrin Formulation Plant 540 (S-718, S-719, S-720, S-721, S-724, S-725, S-729, S-727, S-728, S-730, S-731, S-732, S-733, and S-596) do not exceed 271 rail cars per consecutive 12-month period and truck trips not to exceed 223 per consecutive 12 month period. (Basis: Cumulative Increase)

RECOMMENDATION

I recommend issuing a C/E for the following: under Regulation 2-1-123.3.2

S-726 (T-112) Indopol H-15 organic storage tank 8,800 gallons
S-735 (T-751) Proxel tote- 375 gallons (2 totes)
S-736 (Indopol H-15) Tote, 375 gallons (4 totes)
S-737 (Antifoam C tote) 375 gallons (2 totes)
S-738 (Antifoam 100) 375 gallons (2 totes) exempt per 2-1-123.2

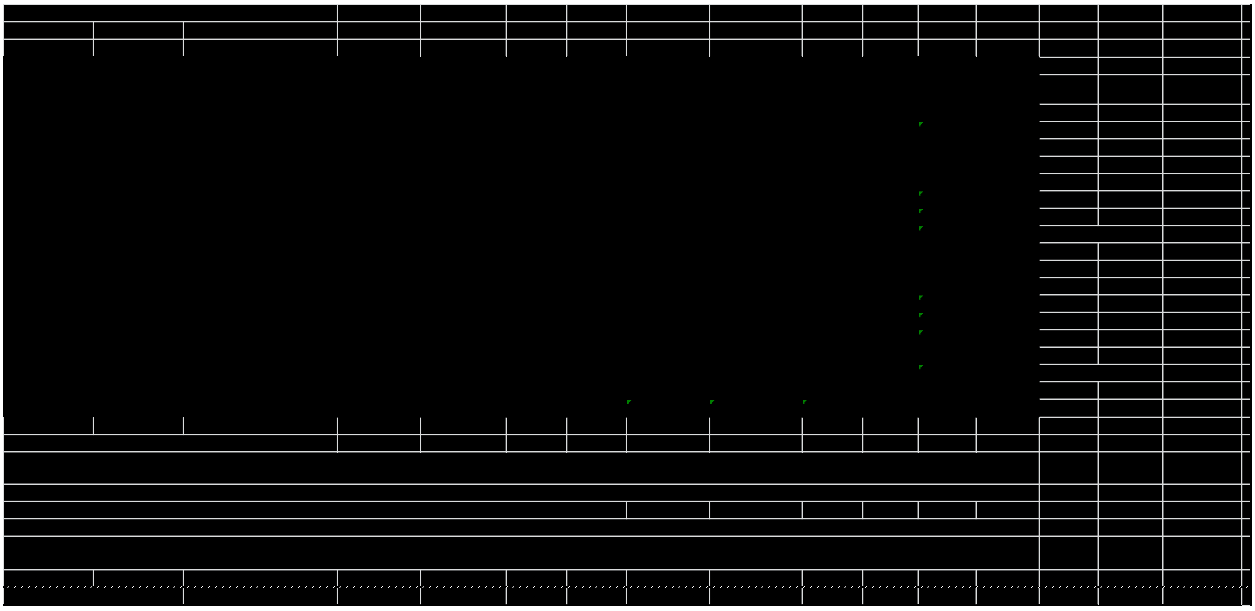
I recommend issuing a change of permit condition for the following:

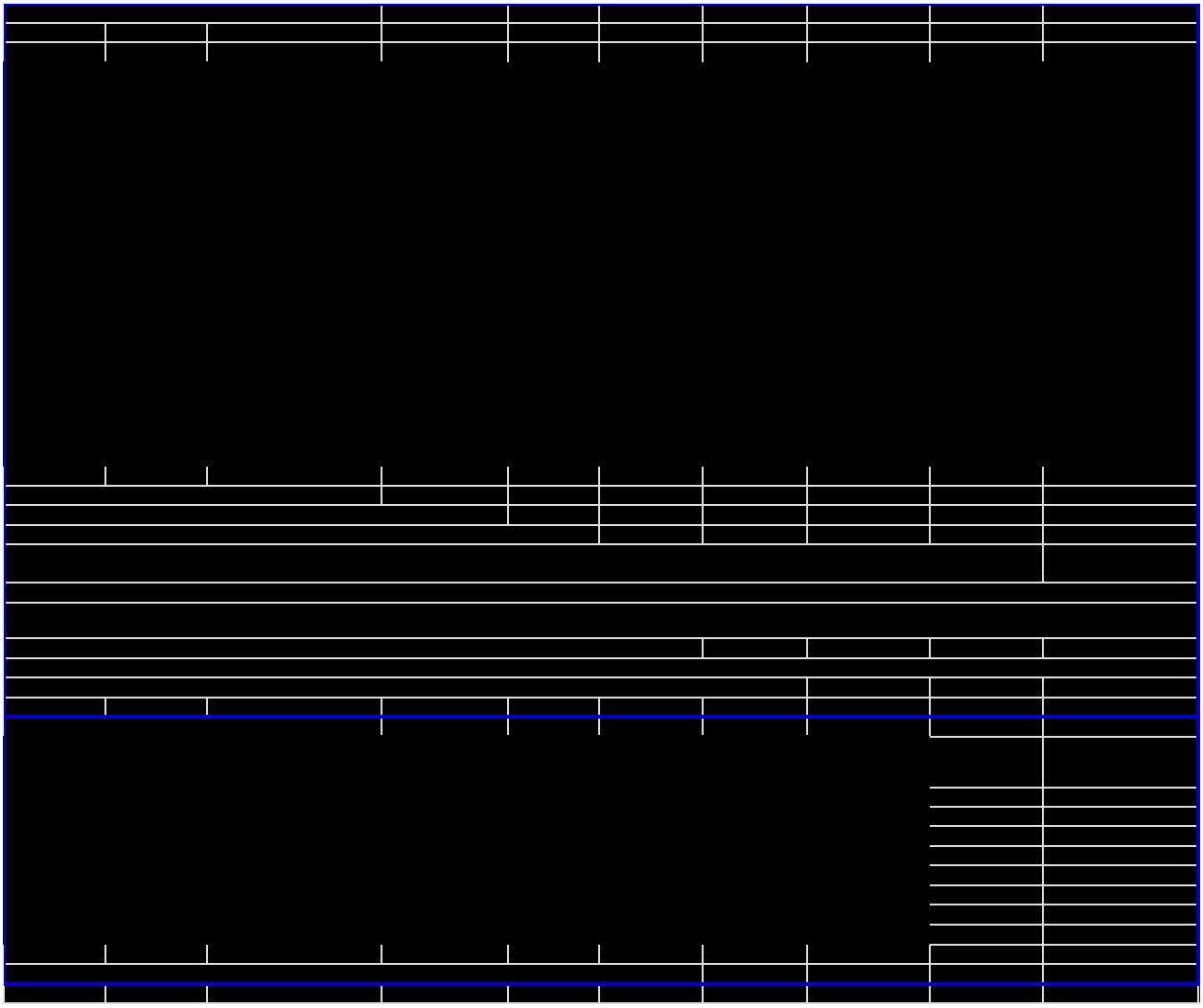
S-718 Nitrapyrin Formulation Plant
S-720 (T-310) Organic Mix, 9,000 gallons
S-725 (V-250) Aqueous Mix, 2,900 gallons
S-727 (T-11) Gel Phase Mix, 1,500 gallons
S-729 (V-100) Encapsulation Vessel, 8,200 gallons
S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons
S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons
S-733 (T-216) Mixing Tank 11,500 gallons

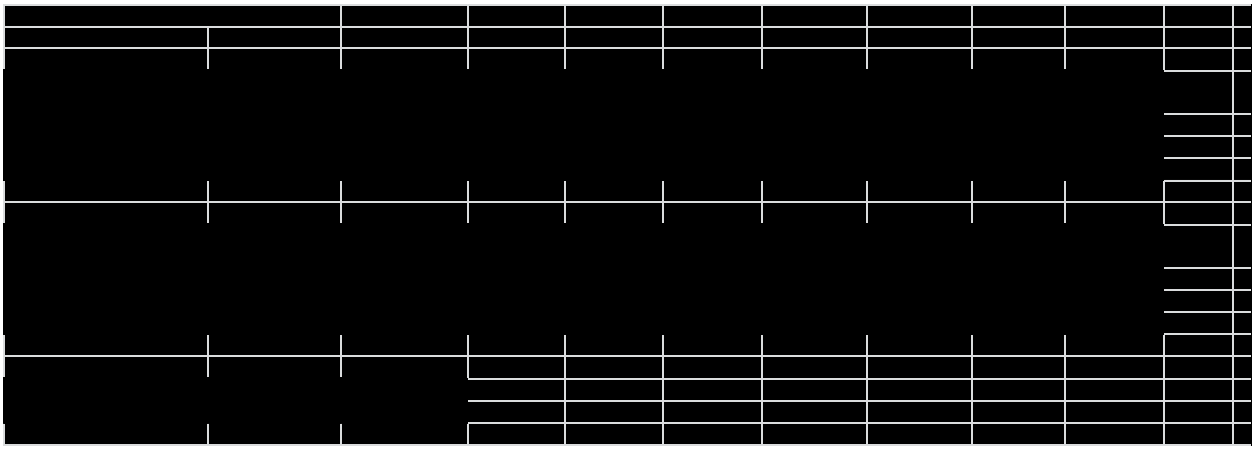
By:_____ Date:_____
Irma Salinas
Senior Air Quality Engineer

APPENDIX A; EMISSION CALCULATIONS

Public Version







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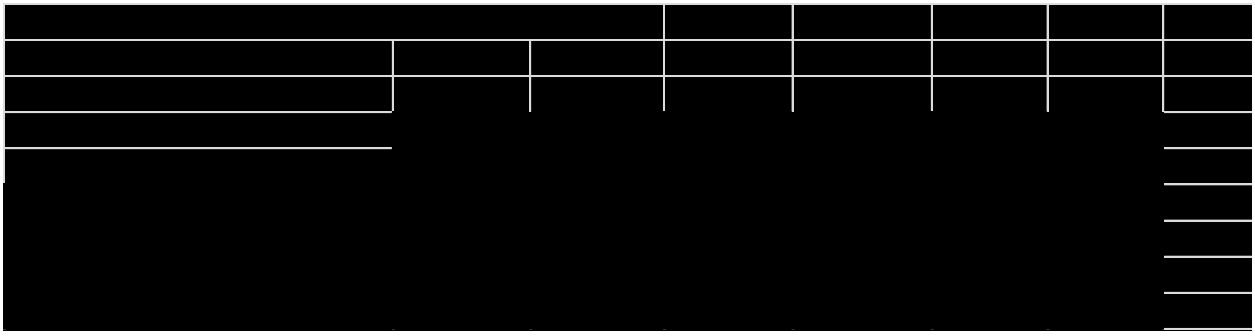

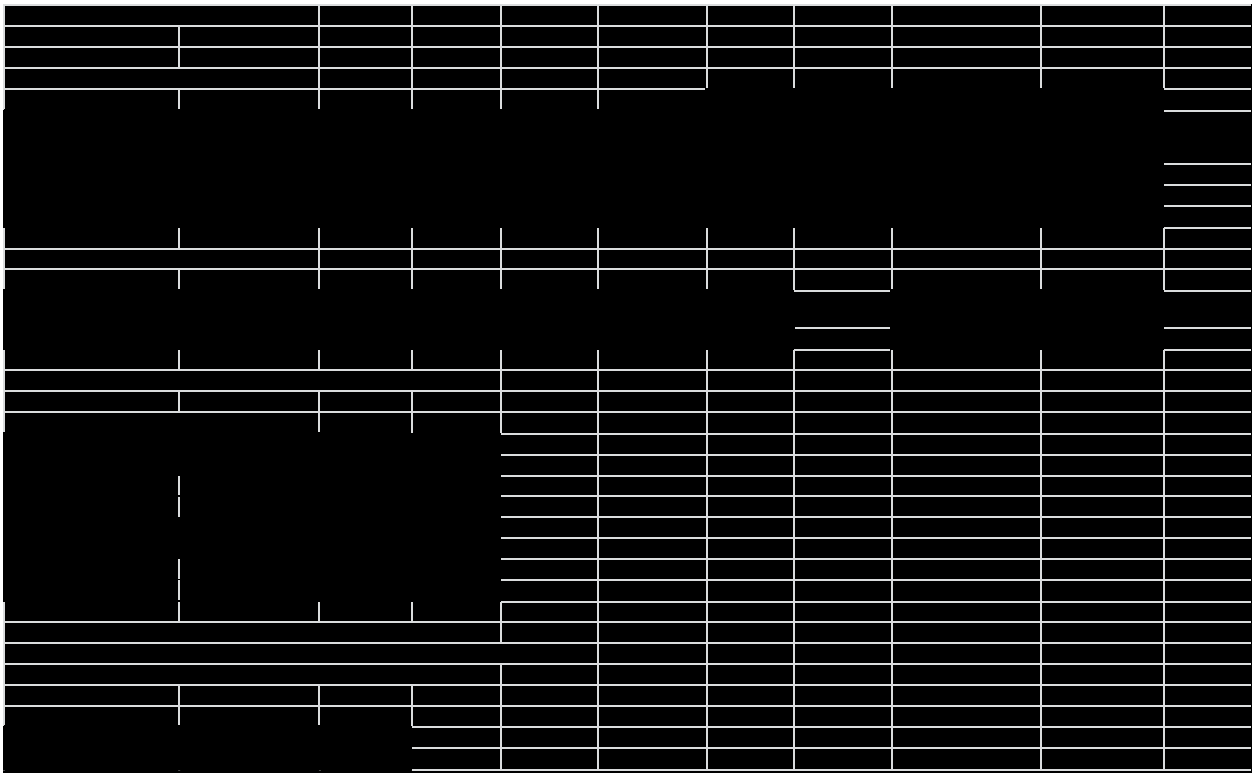

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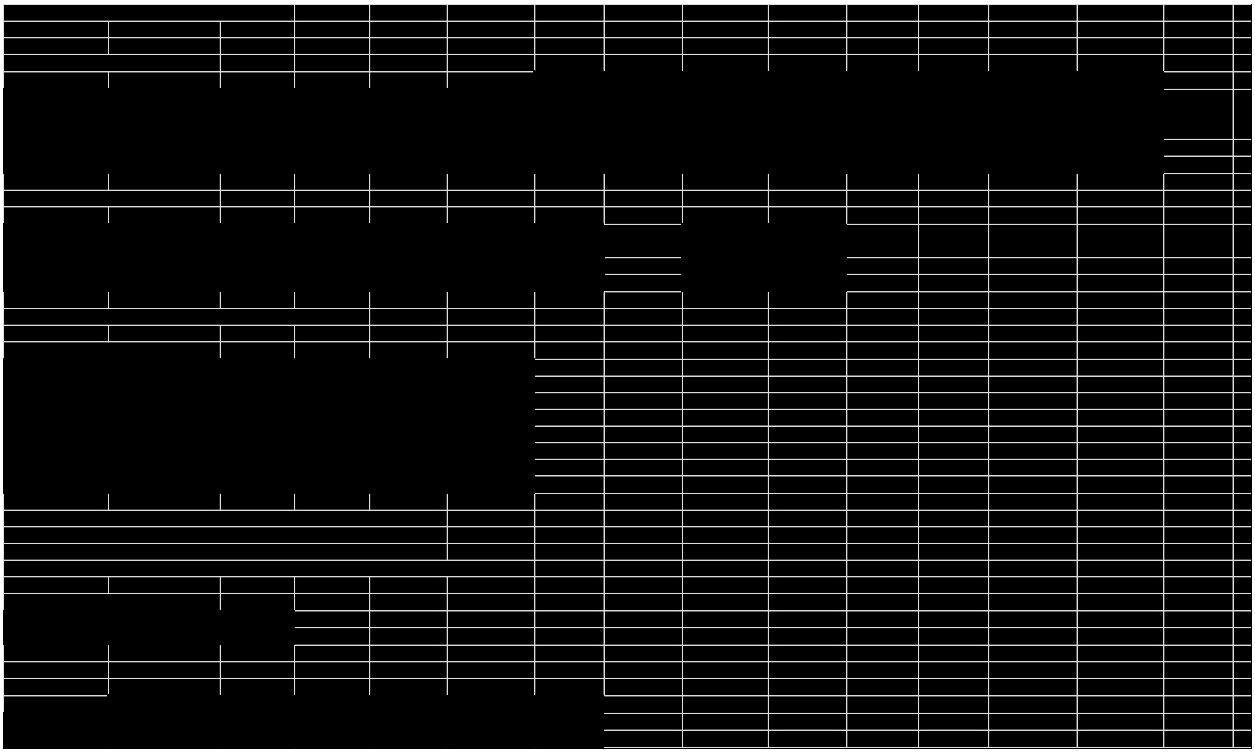

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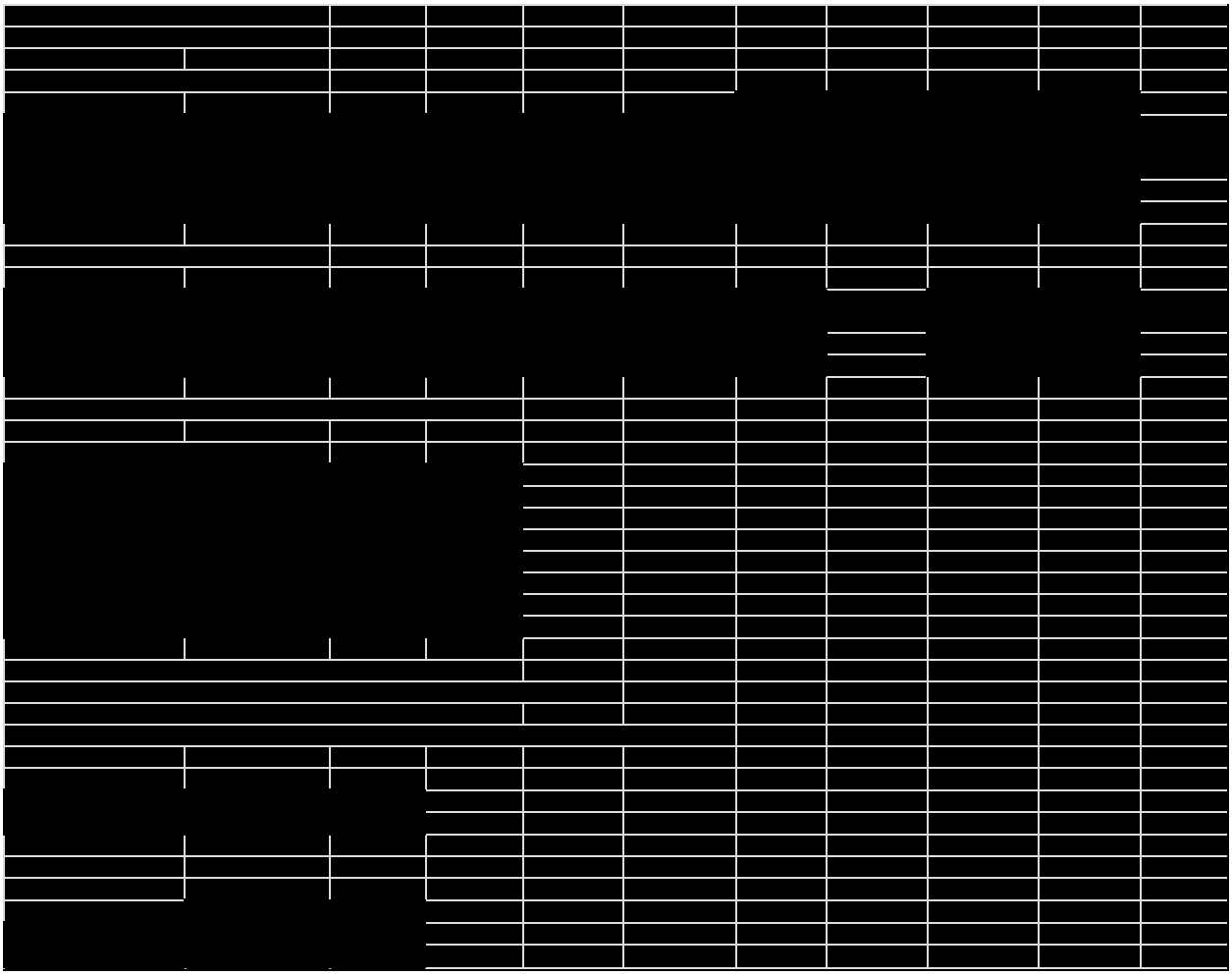

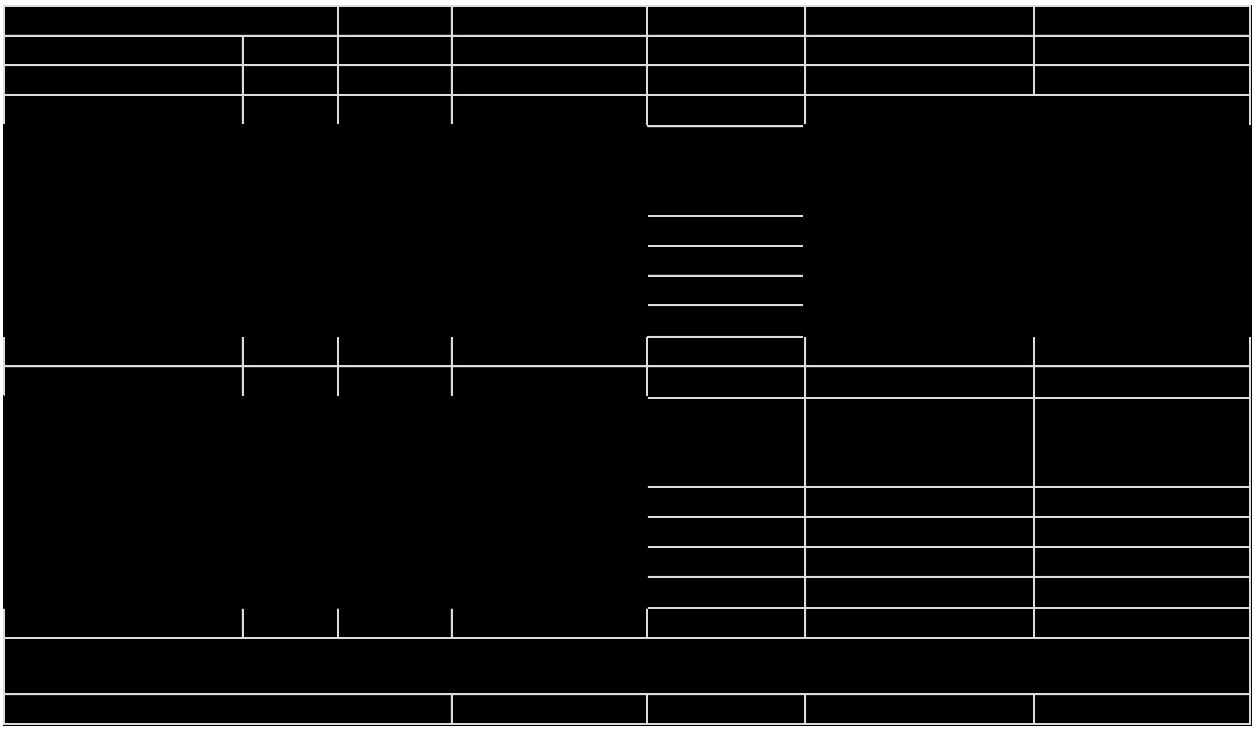

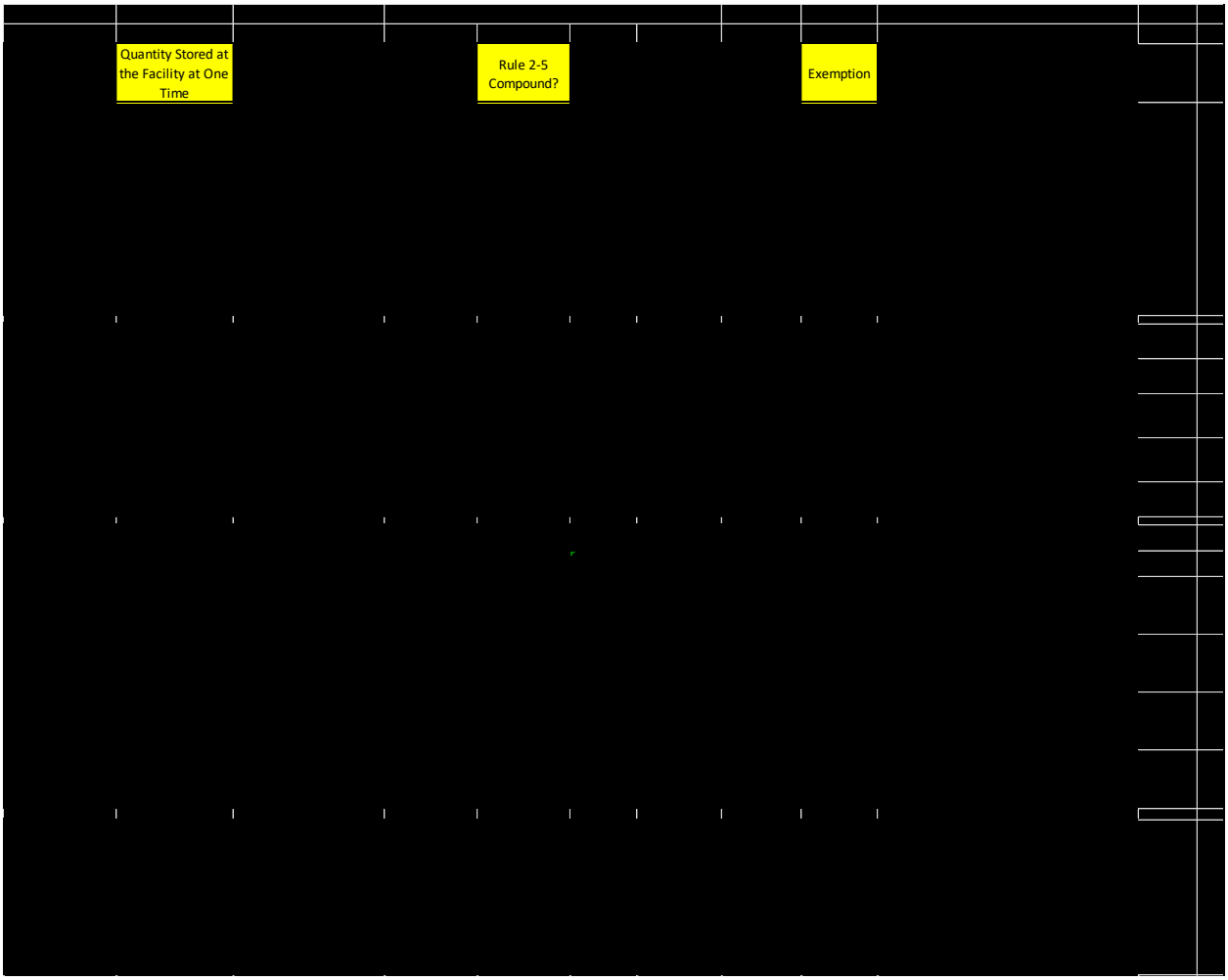
Quantity Stored at the Facility at One Time
Rule 2-5 Compound?
Exemption

APPENDIX D

ENGINEERING EVALUATION AN 28555

The facility requested a change in the formulation of a fourth product from S-718 nitrapyrin plant. The change was using an encapsulated product that was of the same composition as the other component in liquid form. No increase in emissions.

Engineering Evaluation
Corteva Agriscience
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 24380
Application No. 28555

BACKGROUND

The facility has undergone a name change and plant change during the issuance of this permit. Dow Chemical Company (Dow), Plant 31, is now Corteva Agriscience, Plant 24380, however, the Title V permit number will remain as Site # A0031.

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. This facility has applied for changes in the operation of their facility for the following items:

Formulation change of S-718 Nitrapyrin Formulation Plant will affect only the following sources:

- 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
- S-733 (T-216) Product Check Tank, 11,500 gallons

Source S-718 Nitrapyrin Formulation plant is comprised of many tanks, but the tanks above were the only ones affected by this alteration. This change in formulation is considered an alteration because no increase in emissions or throughput will occur and no toxic emissions will be above the already permitted amount based on A/N 26661. The emissions of POCs for S-718 will not increase as emissions are from fugitive component leaks from all the tanks that comprise S-718. In addition, PM emissions will not increase as Corteva Agriscience is not planning on increasing its solids received listed in A/N 21858. In addition, all fees have been paid for this alteration. The facility is proposing to use a material that has no naphthalene in it in a capsule form whereas the existing formulation uses naphthalene in liquid form. The facility is only proposing to produce some of its product with no naphthalene in capsule form.

Emission Calculations

This application will not revise any current throughput or emission limits. Therefore, this application will not result in any changes to the plant cumulative emission increase inventory. The calculations below summarize the potential reductions in emissions that may occur due to the Nitrapyrin formulation change.

A/N 26661 emission calculations

Sources	**Original 4th Formulation**		**Revised 4th formulation using capsulated** [redacted]	
	VOCS	Throughput	VOCs	Throughput
S-729 (V-100)	[redacted]	[redacted]	[redacted]	[redacted]
S-733 (T-216)	[redacted]	[redacted]	[redacted]	[redacted]
S-731 (T-570)	[redacted]	[redacted]	[redacted]	[redacted]
S-730 (T-569)	[redacted]	[redacted]	[redacted]	[redacted]
Total	13.3	lbm/yr	13.06	lbm/yr

Potential Reduction in POC 0.24 lbm/yr

Reduction in Naphthalene Emissions

Source	Original lbs/yr	Revised formulation lbm/yr
S-729	[redacted]	
S-733		
S-731		
S-730		
Total		

Potential Reduction in Naphthalene 0.34 lbm/yr

PLANT CUMULATIVE INCREASE (AFTER 4/5/91)

No Change

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions

After the proposed alteration, the sources have very low organic emissions and no overall change in particulate and organic emission limits for S-718. All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance.

Regulation 2, Rule 1: CEQA Requirements

This 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 emission factors in accordance with Permit Handbook Chapter 3.4 Petroleum Refinery Fugitive Emissions and Chapter 4.0 Organic Liquid Storage Tanks.

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will result in no emissions increase and satisfies the "no net emission increase" provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application (See Appendix H) 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)

A Notice of Exemption (NOE) will be filed with the Contra Costa County Clerk's Office prior to issuing the change of condition.

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project. In addition, from the District's databank program, a search for schools within 0.5 miles of the facility was performed, and the results shown below show that there is no school.

This program lists schools within a specified radius of a plant or
UTM coordinates. The distances calculated are between UTM coordinates and do not account for the outer boundaries of the plant nor the schools.

Enter Plant number, [U] for UTMs, or [E] to end: p
Invalid plant number, try again.

Enter Plant number, [U] for UTMs, or [E] to end: 31
Select units for search radius [M]iles, [K]ilometers : m
Enter desired radius: .5

Search parameters are for:
P#31, Dow Chemical Company
(UTM_E = 600.530, UTM_N = 4209.110)
Search radius within: .50 miles
Do you want to continue? [Y/N]: y

Total number of Schools: 0

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)
Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT). There is no increase in emissions from this alteration, so Regulation 2 Rule 2 is not applicable. Also, the Nitrapyrin Plant is subject to Permit Condition #24763, Part 7, which does not allow this plant to emit more than 9.9 lbs/day of POCs or 1782 lbs/yr of POCs. Therefore, the Nitrapyrin Plant is not subject to BACT requirements for fugitive components. Emissions from tank reformulation are minimal. Emissions from each tank will not exceed the 10 lbs/day threshold and are not subject to BACT.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)
Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. However, since there are no emissions increase for this application, offset requirements are not applicable.

Regulation 2, Rule 2: Offset Requirements, $PM_{2.5}$, PM_{10} and Sulfur Dioxide, (2-2-303)
Regulation 2-2-303 establishes emission offset requirements for $PM_{2.5}$, PM_{10} and Sulfur Dioxide from new or modified sources located at a Major Facility. This plant is a Major Facility, however emissions of PM10 are less than 100 tons/yr and therefore the facility is not subject to the offset requirements of Regulation 2-2-303.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304-309)
Regulations 2-2-304 through 309 apply to new major facilities or a modification of a major facility. Corteva Agriscience is an existing major facility; this application does not qualify as a major modification; so, PSD is not applicable.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
The only Toxic Air Contaminant listed on Table 2-5-1 emitted from the nitrapyrin operation is naphthalene. Since a risk screen analysis was performed under A/N 25438, and the facility is not increasing its emissions above the risk analysis, no increase in toxics will occur, and this project does not require a risk analysis.

Major Facility Review, Regulation 2, Rule 6
This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit 10 tons per year or more of a single hazardous air pollutant, or 25 tons per year or more of a combination of HAPS 2-6-212.2

The facility was issued the initial Title V permit on December 1, 2003. The permit has undergone a renewal in January 1, 2016. This project will trigger a minor revision of the Title V permit. This project

constitutes a minor permit revision pursuant to Regulation 2, Rule 6, Section 215. Please see appendix 1 for a summary of the necessary Title V Permit revisions.

Regulation 8 Rule 2 - Miscellaneous Operations
Source S-718 is and will continue to be in compliance with Regulation 8-2-301 as emissions into atmosphere will not exceed the 15 lbs/day limit and contain a concentration of more than 300 ppm total carbon on a dry basis.

Regulation 8 Rule 5- Storage of Organic Liquids
The tanks (S-729, S-730, S-731 and S-733) will remain in compliance with this Regulation. These tanks will comply with Regulation 8, Rule 5 Section 307 (Requirements for Fixed Roof Tanks, Pressure Tanks and Blanketed Tanks). Per section 8-5-117 (Limited Exemption, Low Vapor Pressure) all provisions of this rule, except for Section 8-5-307.3, shall not apply to tanks storing organic liquids with a true vapor pressure of less than or equal to 0.5 psia as determined by Sections 8-5-602 or 604.

Regulation 8 Rule 18- Equipment Leaks
The Nitrapyrin Plant S-718 is in compliance with this regulation as it applies to leaks from connections, compressors and pressure relief devices, and valves.

Regulation 8 Rule 22 – Valves and Flanges at Chemical Plants
The facility is not subject to Regulation 8 Rule 22 because they have more than 100 valves and are only subject to Regulation 8 Rule 18.

Federal Requirements:

NSPS Requirements
40 CFR Part 60 Subpart Kb NSPS not applicable as the vapor pressure of these compounds in storage tanks are less than 0.51 psia. Specifically, Subpart Kb – Volatile Organic Liquid Storage does not apply to the Nitrapyrin plant. All of 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 capacity 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.

NESHAP
Corteva Agriscience is currently subject to 40 CFR Part 63, Subpart FFFF, National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing: Subpart FFFF has requirements for process vents, storage vessels, transfer operations.

PERMIT CONDITIONS

COND# 24763 ----------

Plant ~~31~~24380
S-718 Nitrapyrin Plant

1. The owner/operator of the Nitrapyrin plant shall construct and operate the plant as described in Application No. 21858, 24429, 25438 ~~and~~ 26661, and 28555. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in these Applications. [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:

   1198 valves;
   4572 connections (flanges, connectors);
   31 pumps;
   48 pressure relief devices;
   8 compressor

   [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. If the TOC concentration (as C1) measured at any component at the Nitrapyrin plant exceeds the concentration standards contained in parts 3 through 5, then the owner/operator shall estimate daily emissions from all Nitrapyrin fugitive components using a District approved method. The owner/operator shall continue to estimate daily emissions from all fugitive components at the Nitrapyrin plant until the leak rate of TOC (as C1) from each component at the Nitrapyrin plant is less than the concentration standards contained in parts 3 through 5.
   [Basis: 2-2-419, Cumulative Increase, Offsets]

8. The owner/operator shall calculate the fugitive emissions from all Nitrapyrin Plant components on a 12-month rolling average basis and a daily basis (as necessary) to demonstrate compliance with part 7 using District approved methodology. The owner/operator shall maintain monthly records of monitoring results, fugitive emission calculations, component counts, and unique permanent identification codes for each component. These records shall be maintained onsite for inspection by District staff for a period of 5 years. (Basis: 2-2-419, Cumulative Increase, Offsets, Recordkeeping)

9. The owner/operator shall ensure that total rail car shipments for the Nitrapyrin Formulation Plant 540 (S-718, S-719, S-720, S-721, S-724, S-725, S-729, S-727, S-728, S-730, S-731, S-732, S-733, and S-596) do not exceed 271 rail cars per consecutive 12-month period and truck trips not to exceed 223 per consecutive 12 month period. (Basis: Cumulative Increase)

RECOMMENDATION

I recommend waiving the Authority to Construct (A/C) and issuance of a Permit to Operate (P/O) for alternations of the following sources for source S-718 Nitrapyrin Formulation Plant:

S-718 Nitrapyrin Formulation Plant
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
S-733 (T-216) Mixing Tank 11,500 gallons

By:_____ Date:_____
Irma Salinas
Principal Air Quality Engineer

APPENDIX A; EMISSION CALCULATIONS Storage Tank Emissions Before and After with change in 4th formulation.

Public Version

Appendix 1 Summary of Title V Permit Changes for A/N 28555- FORMULATION CHANGE FOR S-718 Nitrapyrin Plant

This is a minor permit revision pursuant to Regulation 2, Rule 6, Section 215.

Title Page- Facility name will be changed

Section II. Equipment: No change

Section IV. Source-Specific Applicable Requirements- No change

Section VI: Permit Conditions:

Table VI- Permit Conditions- will be revised to include the application # 28555 to permit condition 24763 part 1.

Section VII: Applicable Emission Limits & Compliance Monitoring Requirements – no change

Corteva Agriscience
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 24380
Application No. 28555

BACKGROUND

The facility has undergone a name change and plant change during the issuance of this permit. Dow Chemical Company (Dow), Plant 31 is now Corteva Agriscience, Plant 24380, however, the Title V permit number will remain the existing Site # A0031.

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. This facility has applied for changes in the operation of their facility for the following items:

Formulation change of S-718 Nitrapyrin Formulation Plant will affect only the following sources:

- 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
- S-733 (T-216) Product Check Tank, 11,500 gallons

Source S-718 Nitrapyrin Formulation plant is comprised of many tanks, but the tanks above were the only ones affected by this alteration. This change in formulation is considered an alteration because no increase in emissions or throughput will occur and no toxic emissions will be above the already permitted amount based on A/N 26661. The emissions of POCs for S-718 will not increase as emissions are from fugitive component leaks from all the tanks that comprise S-718. In addition, PM emissions will not increase as Corteva Agriscience is not planning on increasing its solids received listed in A/N 21858. In addition all fees have been paid for this alteration. The facilty is propsing to use a material that has no naphthalene in it in a capsule form whereas the existing formulation uses naphthalene in liquid form. The facility is only proposing to produce some of its product with no naphthalene in capsule form.

Calculations – none as no increase in emissions.

A/N 26661 emission calculations

Sources	**Original 4th Formulation**		**Revised 4th formulation using encapsuled AroCaps**	
	VOCS	Throughput	VOCs	Throughput
S-729 (V-100)	[redacted]	[redacted]	[redacted]	[redacted]
S-733 (T-216)	[redacted]	[redacted]	[redacted]	[redacted]
S-731 (T-570)	[redacted]	[redacted]	[redacted]	[redacted]

Public Version

S-730 (T-569) [redacted]

Total 13.3 lbm/yr [redacted] 13.06 lbm/yr

Reduction in POC Emissions 0.24 lbm/yr

Reduction in Naphthalene Emissions

Source	Original lbs/yr	Revised formulation lbm/yr
S-729	[redacted]	
S-733		
S-731		
S-730		
Total		

Reduction in Naphthalene emissions is 0.34 lbm/yr

PLANT CUMULATIVE INCREASE (AFTER 4/5/91)

The cumulative increase for criteria pollutants resulting from the alteration at this production plant : no change

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions

After the proposed alteration, the sources have very low organic emissions and no overall change in particulate and organic emissions for S-718. All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance.

Regulation 2, Rule 1: CEQA Requirements

These operations are not expected to be a source of public nuisance. This 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 emission factors in accordance with Permit Handbook Chapter 3.4 Petroleum Refinery Fugitive Emissions and Chapter 4.0 Organic Liquid Storage Tanks.

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will result in no emissions increase and satisfies the “no net emission increase” provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application (See Appendix H) 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)

A Notice of Exemption (NOE) will be filed with the Contra Costa County Clerk's Office prior to issuing the change of condition.

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project. In addition, from the District's databank program, a search for schools within 0.5 miles of the facility was performed, and the results shown below show that there is no school.

This program lists schools within a specified radius of a plant or
UTM coordinates. The distances calculated are between UTM coordinates and do not account for the outer boundaries of the plant nor the schools.

Enter Plant number, [U] for UTMs, or [E] to end: p
Invalid plant number, try again.

Enter Plant number, [U] for UTMs, or [E] to end: 31
Select units for search radius [M]iles, [K]ilometers : m
Enter desired radius: .5

Search parameters are for:
P#31, Dow Chemical Company
(UTM_E = 600.530, UTM_N = 4209.110)
Search radius within: .50 miles
Do you want to continue? [Y/N]: y

Total number of Schools: 0

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)

Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx),

sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT). There is no increase in emissions from this alteration; so Regulation 2 Rule 2 is not applicable. Also, the Nitrapyrin Plant is subject to a permit condition #24763 part 7 that does not allow them to emit more than 9.9 lbs/day of POCs or 1782 lbs/yr of POCs. Therefore, the Nitrapyrin Plant is not subject to BACT requirements for fugitive components. Emissions from tank reformulation are minimal and will not exceed the 10 lbs/day and are not subject to BACT.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)
Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. However, since there are no emissions increase for this application, offset requiremetns are not applicable.

Regulation 2, Rule 2: Offset Requirements, $PM_{2.5,}$ PM_{10} and Sulfur Dioxide, (2-2-303)
Regulation 2-2-303 establishes emission offset requirements for $PM_{2.5}$, PM_{10} and Sulfur Dioxide from new or modified sources located at a Major Facility. This plant is a Major Facility, however emissions of PM10 are less than 100 tons/yr and therefore the facility is not subject to the offset requirements of Regulation 2-2-303.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304-309)
Regulations 2-2-304 through 309 apply to new major facilities or a modification of a major facility. Dow is an existing major facility; however this application does not qualify as a major modification; so PSD is not applicable.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
The only Toxic Air Contaminant listed on Table 2-5-1 emitted from the nitrapyrin operation is naphthalene. Since a risk screen analysis was performed under A/N 25438, and the facility is not increasing its emissions above the risk analysis, no increase in toxics will occur, and this project does not require a risk analysis.

Major Facility Review, Regulation 2, Rule 6
This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit 10 tons per year or more of a single hazardous air pollutant, or 25 tons per year or more of a combination of HAPS 2-6-212.2

The facility was issued the initial Title V permit on December 1, 2003. The permit has undergone a renewal in January 1, 2016. This project will trigger a minor revision of the Title V permit. This project constitutes a minor permit revision pursuant to Regulation 2, Rule 6, Section 215. Please see appendix 1 for a summary of the necessary Title V Permit revisions.

Regulation 8 Rule 2 - Miscellaneous Operations
Source S-718 is and will continue to be in compliance with Regulation 8-2-301 as emissions into atmosphere will not exceed the 15 lbs/day limit and contain a concentration of more than 300 ppm total carbon on a dry basis.

Regulation 8 Rule 5- Storage of Organic Liquids
The tanks (S-729, S-730, S-731 and S-733) will remain in compliance with this Regulation. These tanks will comply with Regulation 8, Rule 5 Section 307 (Requirements for Fixed Roof Tanks, Pressure Tanks and Blanketed Tanks). Per section 8-5-117 (Limited Exemption, Low Vapor Pressure) all provisions of

this rule, except for Section 8-5-307.3, shall not apply to tanks storing organic liquids with a true vapor pressure of less than or equal to 0.5 psia as determined by Sections 8-5-602 or 604.

Regulation 8 Rule 18- Equipment Leaks
The Nitrapyrini Plant S-718 is in compliance with this regulation as it applies to leaks from connections, compressors and pressure relief devices, and valves.

Regulation 8 Rule 22 – Valves and Flanges at Chemical Plants
The facility is not subject to Regulation 8 Rule 22 because they have more than 100 valves and are only subject to Regulation 8 Rule 18.

Federal Requirements:

NSPS Requirements
40 CFR Part 60 Subpart Kb NSPS not applicable as the vapor pressure of these compounds in storage tanks are less than 0.51 psia. 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:

5. Vessels with a capacity less than 19,800 gallons are exempt.
6. 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.
7. 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.
8. 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.

NESHAP
Corteva Agriscience is currently subject to 40 CFR Part 63, Subpart FFFF, National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing: Subpart FFFF has requirements for process vents, storage vessels, transfer operations.

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, 24429, 25438 ~~and~~ 26661,and 28555. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in these Applications.
[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:

1198 valves;
4572 connections (flanges, connectors);
31 pumps;
48 pressure relief devices;
8 compressor

[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. If the TOC concentration (as C1) measured at any component at the Nitrapyrin plant exceeds the concentration standards contained in parts 3 through 5, then the owner/operator shall estimate daily emissions from all Nitrapyrin fugitive components using a District approved method. The owner/operator shall continue to estimate daily emissions from all fugitive components at the Nitrapyrin plant until the leak rate of TOC (as C1) from each component at the Nitrapyrin plant is less than the concentration standards contained in parts 3 through 5.

[Basis: 2-2-419, Cumulative Increase, Offsets]

8. The owner/operator shall calculate the fugitive emissions from all Nitrapyrin Plant components on a 12-month rolling average basis and a daily basis (as necessary) to demonstrate compliance with part 7 using District approved methodology. The owner/operator shall maintain monthly records of monitoring results, fugitive emission calculations, component counts, and unique permanent identification codes for each component. These records shall be maintained onsite for inspection by District staff for a period of 5 years.

[Basis: 2-2-419, Cumulative Increase, Offsets, Recordkeeping]

9. The owner/operator shall ensure that total rail car shipments for the Nitrapyrin Formulation Plant 540 (S-718, S-719, S-720, S-721, S-724, S-725, S-729, S-727, S-728, S-730, S-731, S-732, S-733, and S-596) do not exceed 271 rail cars per consecutive 12-month period and truck trips not to exceed 223 per consecutive 12 month period. (Basis: Cumulative Increase)

RECOMMENDATION

I recommend waiving the Authority to Construct (A/C) and issuance of a Permit to Operate (P/O) for alternations of the following sources for source S-718 Nitrapyrin Formulation Plant:

S-718 Nitrapyrin Formulation Plant
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
S-733 (T-216) Mixing Tank 11,500 gallons

By:_____ Date:_____
Irma Salinas
Principal Air Quality Engineer

APPENDIX A; EMISSION CALCULATIONS Storage Tank Emissions Before and After with change in 4th formulation.

Public Version

Appendix 1 Sumary of Title V Permit Changes for A/N 28555- FORMULATION CHANGE FOR S-718 Nitrapyrin Plant

This is a minor permit revision pursuant to Regulation 2, Rule 6, Section 215.

Title Page- Facility name will be changed

Section II. Equipment: No change

Section IV. Source-Specific Applicable Requirements- No change

Section VI: Permit Conditions:

Table VI- Permit Conditions- will be revised to include the application # 28555 to permit condition 24763 part 1.

Section VII: Applicable Emission Limits & Compliance Monitoring Requirements – no change

Public Version

APPENDIX E

ENGINEERING EVALUATIONS AN 28034

The facility requested a replacement of two abatement devices that had reached their end of life. Both replacement devices will be almost identical to the equipment they are replacing. The new devices will have the same internal dimensions, the same types of internal components, the same control efficiency, and the same packing type (fiber re-enforced polymer resin).

Engineering Evaluation
Dow Chemical Company
901 Loveridge Rd
Pittsburgh, CA 94565
Plant No. 31
Application No. 28034

BACKGROUND

Dow Chemical Company (Dow), has applied for an Authority to Construct for the replacement of two abatement devices that have reached their end of life. Abatement device A-410 B-16 Caustic Scrubber will replace A-72 B-16 Caustic Scrubber and abatement device A-412 B-501Acid Absorber will replace A-94 501 Acid Absorber. Both replacement devices will be almost identical to the equipment they are replacing in that: with almost identical (as it will have the same internal dimensions and will have the same types of internal components and the same control efficiency, same packing type (fiber re-enforced polymer resin). Abatement devices A-410 and A-412 will abate secondary hydrogen chloride and chlorine emissions that exit the thermal oxidizers. The primary abatement devices S-336 and S-389 Thermal Oxidizer have a destruction efficiency greater than 99% for chlorinated organic compounds. Emissions going to the scrubbers will be negligible. Abatement efficiencies for the scrubbers will be 98% or greater. All fees have been payed. The facility is requesting an Authority to Construct for the following abatement devices and a change in conditions # 2039 and 6859 to reflect replacement of abatement devices with new abatement devices:

A-410 B-16 Caustic Scrubber
A-412 B-501 Acid Absorber

Calculations – none required as this is replacement of abatement equipment.

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions
All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance. The proposed modification has very low particulate emissions and is not expected to be a source of public nuisance.

Regulation 2, Rule 1: CEQA Requirements

This project is considered to be exempt from 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. This is exempt because the facility is installing abatement equipment per 2-1-312.2 (Permit applications to install air pollution control or abatement equipment). The facility has included an appendix H for each of the abatement devices that they wish to replace.

A Notice of Exemption (NOE) will be filed with the Contra Costa County Clerk's Office prior to issuing the Authority to Construct for the replacement of abatement equipment.

Public Version

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project. In addition, from the District's databank program, a search for schools within 0.5 miles of the facility was performed, and the results shown below show that there is no school.

> This program lists schools within a specified radius of a plant or
> UTM coordinates. The distances calculated are between UTM coordinates and do not account for the outer boundaries of the plant nor the schools.
>
> Enter Plant number, [U] for UTMs, or [E] to end: p
> Invalid plant number, try again.
>
> Enter Plant number, [U] for UTMs, or [E] to end: 31
> Select units for search radius [M]iles, [K]ilometers : m
> Enter desired radius: .5
>
> Search parameters are for:
> P#31, Dow Chemical Company
> (UTM_E = 600.530, UTM_N = 4209.110)
> Search radius within: .50 miles
> Do you want to continue? [Y/N]: y
>
> Total number of Schools: 0

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)

Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT). The facility is only replacing abatement equipment with like kind. There will be no increase in emissions. Facility is not subject to BACT for this application.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)

Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. This Regulation is not applicable as there will be no increase in emissions from the installation of abatement devices with same efficiency. Facility is not subject to offsets for this application.

Regulation 2, Rule 2: Offset Requirements, PM_{10} and Sulfur Dioxide, (2-2-303)

Regulation 2-2-303 establishes emission offset requirements for PM10 and Sulfur Dioxide from new or modified sources located at a Major Facility. This plant is a Major Facility, however emissions of PM10 are less than 100 tons/yr and therefore the facility is not subject to the offset requirements of *Regulation 2-2-303*.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304-309 or 315)

Regulations 2-2-304 through 309 and 2-2-315 apply to new major facilities or a modification of a major facility. Dow is an existing major facility; however, this application does not qualify as a major modification; so PSD is not applicable.

The facility is not subject to Regulation 2-2-317 (Maximum Achievable Control Technology) because site-wide HAP emissions will not exceed 10 tons/year for any single HAP nor 25 tons/year for all HAPs combined.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
There are no emissions increase with this application. This application is only for the replacement of like kind abatement equipment. Facility is not subject to risk screen analysis as there is no increase in emissions. Abatement equipment has same efficiency as equipment that it is replacing.

Major Facility Review, Regulation 2, Rule 6
This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit more than 100 tons per year of any regulated air pollutant (POC and CO). The requirements of this program have been codified in District Regulation 2, Rule 6.

The facility was issued the initial Title V permit on December 1, 2003. The most recent renewal for this facility was January 15, 2016. This project will trigger a minor revision of the Title V permit. It will be processed in a separate application.

Regulation 6 Rule 1 General Requirements
The facility will continue to be in compliance with Regulation 6 Rule 1, sections 301, 310 and 311 for abatement sources S-336 and S-389 (Thermal Oxidizers) and sources S-44, 434, S-446, S-644, S-645, S-648, S-649, S-650, S-651 and S-652.

Regulation 8 Rule 2 Miscellaneous Operations
The facility will continue to be in compliance with Regulation 8 Rule 2, sections 301 for abatement sources S-336 and S-389 (Thermal Oxidizers) and sources S-44, S-434, S-446, S-521 and S-648.

Regulation 8 Rule 5- Storage of Organic Liquids
Facility will continue to remain in compliance with Regulation 8 Rule 5 for sources S-27, S-29, S-30, S-31, S-33, S-35, S-151, S-153, S-431, S-432, S-519, S-520, S-641, S-662, S-663, S-664 and S-701. Facility has existing approved abatement devices and efficiencies for thermal oxidizers (S-336 and S-389) and have demonstrated destruction efficiencies in excess of 99%.

Regulation 8 Rule 6 Organic Liquid Bulk Terminals and Bulk Plants
Facility will continue to remain in compliance with Regulation 8 Rule 6 for sources S-5, S-6, S-7, S-482, S-483 and S-701. Source S-6 continues to be exempt from 8-6-110 as all liquids loaded have vapor pressures less than 0.5 psia.

Regulation 8 Rule 10 Process Vessel Depressurizing
Facility will continue to remain in compliance with rule for sources S-44, S-434 and S-446.

Regulation 8 Rule 18- Equipment Leaks
Facility is in compliance with this regulation as it applies to leaks from connections, compressors and pressure relief devices, and valves.

Regulation 8 Rule 22 – Valves and Flanges at Chemical Plants
The facility is not subject to Regulation 8 Rule 22 because they have more than 100 valves and are only subject to Regulation 8 Rule 18.

Regulation 8 Rule 47 Air Stripping and Soil Vapor Extraction Operations
The facility is in compliance and will continue to be in compliance with this regulation for source S-682.

Federal Requirements:

NSPS Requirements
40 CFR Part 60 NSPS not applicable as the vapor pressure of these compounds in storage tanks are less than 0.51 psia per Subpart Kb not applicable.

NESHAP
Dow is subject to Subpart FFFF as it has requirements for process vents, storage vessels, and transfer operations. Dow is also subject to Subpart EEE (hazardous waste combustors- S-336 and S-389), Subpart EEEE (Organic Liquid Distribution), Subpart NNNNN (HCL Production) and Subpart MMM (Pesticide Active Ingredient Production).

PERMIT CONDITIONS

Condition # 6859

Applications 26910, 7308, 12387, 11902, 16468, 8895, 28034
Conditions for S-336, Manufacturing Services Thermal Oxidizer
A-21, B-15 Manufacturing Services Scrubber
A-54, B-15 Demister
A-410, B-16 Caustic Scrubber
A-86, B-14A & B Karbate Acid Absorber:

1. The liquid waste feed rate to S-336 shall not exceed 650 lbs/hr.
   (Basis: BAAQMD Regulation 2-1-403)

2. Effluent flow from Manufacturing Services Thermal Oxidizer (S-336) shall be routed to Stack P-260 per the following sequence: B-13 Quench, B-14A and B-14B Absorbers (A-86), B-15 Absorber (A-21) with Demister (A-54), B-16 Caustic Scrubber (A-410).
   (Basis: BAAQMD Regulation 2-1-403)

3. Nitrogen oxide (NOx) emissions shall not exceed 8.6 lbs/day as NO2.
   (Basis: Cumulative Increase, Offsets – contemporaneous reduction)

4. The S-336 Thermal Oxidizer shall achieve a minimum organic destruction efficiency of 99.99% by weight.
   (Basis: Cumulative Increase, Offsets – contemporaneous reduction)

5. To confirm compliance with Part #1, the owner/operator of S-336 shall maintain hourly records of the liquid waste feed rate to the S-336 Thermal Oxidizer.

(Basis: BAAQMD Regulation 2-1-403)

6. During any time that the S-336, Thermal Oxidizer, is burning gaseous or liquid waste, the combustion chamber of S-336 shall be operated at a minimum temperature of 1745 degrees F. To confirm compliance with this condition, the owner/operator of S-336 shall continuously monitor and record the temperature of the combustion chamber.
(Basis: Cumulative Increase, Offsets – contemporaneous reduction)

7. The records for Parts 5, 6, 8, and 9 shall be retained on-site for a period of five years from the date of last entry and made available to District personnel upon request.
(Basis: Cumulative Increase, Offsets – contemporaneous reduction, BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501)

8. To demonstrate compliance with Part 3 above, the owner/operator shall conduct a source test to determine NOx emissions at least once every 5 years. 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: Cumulative Increase, Offsets – contemporaneous reduction, BAAQMD Regulation 2-6-501)

9. The pH of the A-410, B-16 Caustic Scrubber shall be maintained at a minimum pH of 7.6, as measured and recorded on an hourly rolling average value whenever liquid feed or process vents are fed to the Thermal Oxidizer, S-336.
(Basis: BAAQMD Regulation 2-6-503)

Condition # 2039

Applications 26939, 726, 12387, 16468, 8895, 18563, 28034
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-412; B-501 Acid Absorber
A-205, R-503 Carbon Monoxide Scrubber

14. 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)

15. 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)

16. S-389 shall be abated by A-412 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)

17. Carbon Monoxide (CO) emissions from S-389 shall not exceed 250 ppm at 3% oxygen.
(Basis: Cumulative Increase, BACT)

18. 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)

19. Deleted.

20. Annual average liquid feed throughput for S-389 shall not exceed 45.1 gallons/hour.
(Basis: Cumulative Increase)

21. Maximum daily liquid feed throughput for S-389 shall not exceed 70 gallons/hour.
(Basis: Cumulative Increase, BACT)

22. The owner/operator of S-389 shall conduct a District approved source test every 6 months to 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)

23. NOx emissions from S-389 shall not exceed 6194 pounds/year. 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 Condition, 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 60 days of source test completion.
(Basis: Cumulative Increase, BACT)

24. Carbon Adsorbers B-503 A and B (A-76 and A-80), and Oxidation Catalyst (A-205) shall operate at all times that the R-502 NSCR Unit (A-77) is operating except during 30 minute startup periods and 30 minute shutdown periods.
(Basis: Cumulative Increase, BACT)

25. Deleted.

26. 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: Regulation 2, Rule 5)

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)

16. The pH of the A-74, B-502 Caustic Scrubber, shall be maintained at a minimum pH of 7.35 as measured and recorded on an hourly rolling average value whenever liquid feed or process vents are fed to the Thermal Oxidizer, S-389.
    (Basis: BAAQMD Regulation 2-6-503)

RECOMMENDATION

I recommend issuing an Authority to Construct for the following abatement devices along with a change in condition for condition #'s 2039 and 6859:

A-410 B-16 Caustic Scrubber
A-412 B-501 Acid Absorber

By:_____ Date:_____
Irma Salinas
Principal Air Quality Engineer

APPENDIX F

ENGINEERING EVALUATIONS AN 29320

The facility requested permitting for a new emergency diesel engine S-800.

ENGINEERING EVALUATION
Corteva Agriscience
901 Loveridge Road
Plant Number: 24380
Application Number: 29320

BACKGROUND

The Applicant has submitted an application for an Authority to Construct for the following:

S-800 Emergency Standby Diesel Generator Set
2016 Cummins Model: QSB5-G6
EPA Family Name: HCEXLO275AAK-021
208 BHP, 1.41 MMBTU/hr

The engine will be used to provide emergency power at its facility.

S-800 is a new engine generator that the applicant plans to install in the near future.

EMISSION CALCULATIONS

Criteria Pollutants

Pollutant	Emission Factor	Emissions		
	(g/hp-hr)	Annual (lb/yr)	Annual (TPY)	Maximum Daily (lb/day)
NMHC + NOx	2.79			
NOx	2.65	60.77	0.03	29.17
NMHC	0.14	3.20	0.0016	1.54
CO	0.66	15.13	0.076	7.26
$PM_{2.5}/PM_{10}$ (diesel particulate)	0.10	2.29	0.0011	1.10
SO2	0.0055	0.13	0.000063	0.06

Basis:

- 208 hp Max Rated Output – 10.3 gallons/hr Max Fuel Use Rate = 1.41 MMBTU/hr Max Combustion Capacity
- 50 hr/yr maximum Non-Emergency Operations per the stationary Airborne Toxic Control Measure (ATCM)
- The (NO_x+NMHC), CO, and PM10 emission factors are from the Manufacturer's Performance Data Sheet
  NOx is assumed to be 95% of (NMHC + NOx)
  POC is assumed to be 5% of (NMHC + NOx)
- The SO_2 emission factor is based on 15 ppm sulfur in ULSD fuel derived from EPA AP-42, Table 3.4-1.

- Max daily emissions are based on 24 hr/day since no daily limits are imposed on emergency operations

**The emission factor for SO2 is from Chapter 3, Table 3.4-1 of the EPA Document AP-42, Compilation of Air Pollutant Emission Factors.

SO_2 8.09E-3 (% S in fuel oil) lb/hp-hr = 8.09E-3 (0.0015% S) (454 g/lb) = 0.0055 g/hp-hr

Annual Emissions:
Annual emissions are calculated based on the number of hours per year of operation for testing and maintenance.

Daily Emissions:
Daily emissions are calculated to establish whether a source triggers the requirement for BACT (10 lb/highest day total source emissions for any class of pollutants). 24-hr/day of operation will be assumed since no daily limits are imposed on intermittent and unexpected operations.

Cumulative Increase
The cumulative increase for criteria pollutants resulting from the planned operation of S-800 at 50 hours per year: All emissions from prior applications have been offset.

Table #1

Pollutant	Existing Cumulative Increase - Post 4/5/91 (TPY)	Application Emissions Increase (TPY)	Final Cumulative Increase (TPY)
NOx	0.0	0.03	0.03
POC	0.0	0.0016	0.0016
CO	26.843	0.0076	26.85
$PM_{2.5}$ PM_{10}	2.265	0.0011	2.266
SO2	0.143	0.00006	0.143

STATEMENT OF COMPLIANCE:

Regulation 1: General Provisions and Definitions
All sources are subject to Regulation 1, Section 301 which prohibits discharge of air contaminants resulting in public nuisance. The proposed emergency standby diesel engine has very low particulate emissions and is not expected to be a source of public nuisance.

Regulation 2, Rule 1: CEQA Requirements

This 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 emission factors in accordance with Permit Handbook Chapter 2.3.1. Stationary Diesel Engines.

A Notice of Exemption (NOE) will be filed with the Contra Costa County Clerk's Office prior to issuing the Authority to Construct.

Regulation 2, Rule 1: School Public Notice Requirements

The project is not within 1000 feet from the nearest school and therefore is not subject to the public notification requirements of Reg. 2-1-412. See attached google map showing that no schools are within 1000 ft of project.

Regulation 2 - Permits, Rule 2 – Best Available Control Technology Requirement (Section 2-2-301)

Any new or modified source that has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), PM_{10} or carbon monoxide (CO) is required to use Best Available Control Technology (BACT). Source S-800 triggers BACT for NOx since the proposed maximum daily emissions of NOx exceed the BACT limit of 10 lb/day. BACT for this source is derived from the CARB ATCM Standards and set forth in the *BAAQMD BACT/TBACT Workbook for IC Engine Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document # 96.1.3, Revision 7 dated 12/22/2010.* The more restrictive BACT 1 standard is not applicable to this engine because it will be limited to operation as an emergency standby engine. The BACT 2 emission limits for NOx, CO and PM-10 are 2.85 g NOx/bhp-hr, 2.6 g CO/bhp-hr, and 0.15 g PM/bhp-hr respectively. According to the engine's Compliance Statement the NOx, CO and PM emission rates for this engine are 2.65 g NOx/bhp-hr, 0.6 g CO/bhp-hr, and 0.1 g PM/bhp-hr respectively which are below the BACT 2 emission limits. Facility is in compliance with BACT2 criteria.

Regulation 2, Rule 2: Offset Requirements, POC and NOx (Section 2-2-302)

Federally enforceable emission offsets shall be provided for any new or modified source at a facility that will be permitted to emit more than 10 tons/yr of either NOx or POC. Since the facility emissions of NOx and POC are greater than 10 tons/yr, S-800 is subject to the offset requirements of *Regulation 2-2-302* (see Table 1).

	Tons/yr		Offset Ratio		Tons/yr	
NO_x	0.030		1.15		0.035	
POCs	0.002		1.15		0.002	
Total Offsets Required for A/N 29321					0.037	

The facility has provided a Certificate of Deposit #1525 (12.379 tons/yr of POCs) for the offsets of 0.002 tons/year and the Certificate of Deposit #1698 (0.05 tons/year of NOX) for 0.035 tons/year of NOX.

Regulation 2, Rule 2: Offset Requirements, $PM_{2.5}$, PM_{10} and Sulfur Dioxide, (2-2-303)
Regulation 2-2-303 establishes emission offset requirements for $PM_{2.5}$, PM_{10} and Sulfur Dioxide from new or modified sources located at a Major Facility. Plant 31 is a Major Facility, however emissions for these compounds will not have the potential to exceed 100 tons per year per compound, and therefore is not subject to the offset requirements of *Regulation 2-2-303*.

Regulation 2, Rule 2; Prevention of Significant Deterioration (PSD) (Section 2-2-304)
New major facilities and major modifications at major facilities must meet modeling requirements of *Regulation 2-2-304 PSD Requirement.* This is not a new major facility; nor is it a major modification at a major facility and therefore PSD modeling is not required for this application.

Regulation 2- Rule 5 New Source Review of Toxic Air Contaminants
The only Toxic Air Contaminant listed on Table 2-5-1 emitted from S-800 is diesel particulate which has a chronic trigger level of 0.26 lb/yr. It is assumed that all of the PM10 is diesel particulate. Based on the above calculations the annual diesel particulate emissions are 2.29 lb/year.

An HRA was performed. Results from this HRA indicate that the maximum project cancer risk is estimated at 0.3 in a million, and the maximum project chronic hazard index is estimated at 0.0002. In accordance with the District's Regulation 2, Rule 5, this source complies with the TBACT and project risk requirements. Therefore, this project will comply with Regulation 2, Rule 5, Section 301 and 302. A previous HRA was performed for A/N 25438 and permit issued in January 2014. This application is more than 3 years older than the current application that is being evaluated, and thus will not be considered part of a project per 2-5-216. Since this time, there has been no other HRA required for this facility.

Previous Applications:
A/N 25436 issued P/O November 18, 2013 HRA was performed
A/N 25438 issued P/O January 17, 2014 HRA was performed
A/N 26661 issued P/O October 26, 2015 This application is within the 3 year period however this application did not result in an increase in toxic air contaminant naphthalene but a reduction so no new HRA was performed and the previous risk assessment performed under AN 25438 application is still valid. There was no increase in TAC from this application.

A/N 26077 issued P/O March 29, 2016. This application is within the 3 year period however this application did not result in an increase in emissions for toxic air contaminant carbon tetrachloride above the permitted risk level from A/N 25436. There was no increase in TAC from this application.
Regulation 2- Rule 6 Major Facility Review

This is a minor permit revision pursuant to Regulation 2, Rule 6, Section 215. Please see appendix 1 for detail of the SOB.

This facility is subject to MFR Permit requirements pursuant to Regulation 2-6-301, because it has the potential to emit 10 tons per year or more of a single hazardous air pollutant, or 25 tons per year or more of a combination of HAPS 2-6-212.2

The facility was issued the initial Title V permit on December 1, 2003. The permit has undergone a renewal in January 1, 2016. This project will trigger a minor revision of the Title V permit.

Regulation 6, Rule 1 Particulate Matter-General Requirements

The engine has a displacement less than 25 liters and therefore is exempt from a Ringelmann 1 of Regulation 6 Rule 1, Section 301 and Section 302 Opacity Limitation. The facility is expected to be in compliance with Regulation 6, Rule 1, Section 303 Ringelmann No 2 Limitation which states that a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 2 on the Ringelmann Chart. Section 6-1-305 prohibits public nuisance caused by fallout of visible particulate emissions. Since S-800 will emit a very small amount of PM10 it is not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to be in compliance with *Regulation 6-1-305* pending a regular inspection.

Regulation 6-1-310 limits the exhaust point emission rate to 0.15 grains/dscf. This engine complies with Regulation 6-1-310 by a margin of at least 5:1. Since there is a high margin of compliance with this grain loading limit and the particulate emission rate has been certified by CARB, it is not necessary to conduct any addition compliance demonstration monitoring for this limit.

Grains/dscf = (7000grains/453.6grams)*(208 bhp)*(.10 grams/bhp-hr)/[(10.3 gallons/hr*.137MMBTU/gallon*9190 dscf/MMBTU]=0.025 gr/dscf for S-800

	S-800
HP	208
PM G/BHP-hr	0.1
Fuel gal/hr	10.3
dscf/MMBTU	9190
grain loading grains/dscf	#####

Regulation 8, Rule 1: General Provisions

All internal combustion engines are exempt from this provision per 8-1-110.2.

Regulation 8, Rule 2: Miscellaneous Operations

This rule applies to diesel oil fired IC engines. Regulation 8-2-301 limits total carbon emissions to either 15 pounds/day or to an exhaust stack concentration of 300 ppmv. From the calculations above, maximum emissions respectfully for source S-800 is 1.54 pounds/day of POC. Therefore, the engine will comply with Regulation 8-2-301 by emitting less than 15 pounds/day of total carbon. Additional monitoring to verify compliance with this certified emission rate is not necessary.

Regulation 9, Rule 1: Inorganic Gaseous Pollutants- Sulfur Dioxide

The stationary diesel engine is subject to Regulation 9, Rule 1. Regulation 9-1-301 limits the ground level concentrations of sulfur dioxide at the fence line of the site. Sources complying with Regulations 9-1-302 and 9-1-304 are expected to result in compliance with the Regulation 9-1-301 ground level fence line sulfur concentration limits. As shown below, S-800 will comply with Regulations 9-1-302 and 9-1-304 with a high margin of compliance. In addition, SO2 emissions from this source is very low. Therefore, ground level sulfur monitoring is not required as a result of adding the source to this site.

Regulation 9-1-302 limits the sulfur dioxide concentration in an exhaust point to 300 ppmv. At the CARB diesel fuel sulfur content limit of 0.0015% sulfur by weight and the theoretical F-factor of 9190 dscf of flue gas (0% O_2) per MM BTU of diesel oil, the maximum possible concentration in the exhaust gas is a little above 1 ppmv of SO_2. Since this maximum possible concentration is far less than the 300 ppmv SO_2 concentration limit, additional compliance demonstration monitoring is not necessary.

PPMV = (208 hp) * (0.0055 grams SO2/bhp-hr) / (453.6 grams SO2/lb SO2) /
(64.07 lbs SO2/lbmol SO2) * (385 ft3 SO2/lbmol SO2) / (1.41MM Btu/hr) /
(9190 ft3 flue gas at 0% O2/MMBtu) = 1.17E-6 ft3 SO2 / ft3 flue gas at 0% O2

	S-800
g/bhp-hr SO2	#####
MW SO2	64.07
Diesel Fuel F Factor, dscf/MM BTU	9190
HP	208
Heat Value MM Btu/hr	#####
PPMV of SO2 in Engine Flue Gas (0% O2)	1.17

	S-800
g/bhp-hr SO2	0.0055
MW SO2	64.07
Diesel Fuel F Factor, dscf/MM BTU	9190
HP	208
Heat Value MM Btu/hr	1.41E+00
PPMV of SO2 in Engine Flue Gas (0% O2)	1.17

Regulation 9-1-304 limits the sulfur content of liquid fuels to 0.5% by weight. Since the engines will use only CARB diesel oil containing less than 0.0015% sulfur by weight, these engines will comply with this limit. Records of the source of fuel used in these engines will verify compliance with this limit since diesel fuel with a 0.0015% by weight sulfur is mandated for use in California.

Regulation 9, Rule 2: Inorganic Gaseous Pollutants: Hydrogen Sulfide
The ground level concentrations limit of hydrogen sulfide in Section 9-2-301 is 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes. This emergency diesel engine is not expected to be a significant source of hydrogen sulfide emissions; therefore, compliance with this rule is expected.

Regulation 9, Rule 8-Nitrogen Oxide and Carbon Monoxide from Stationary ICE
The requirements of Sections 9-8-301 through 305, 501 and 503 are not applicable as this engine is an emergency standby engine per 9-8-110.5. The facility will be in compliance with Regulation 9 Rule 8 Section 330 Emergency Standby Engine Hours of Operation. The facility will be limited in its permit condition to testing and maintenance not to exceed 50 hours per year. The facility will be in compliance with recordkeeping requirements of 9-8-502 and Monitoring and recordkeeping requirements per section 9-8-530 per permit condition # 22850.

Regulation 10 – Standards of Performance for New Stationary Sources -New Source Performance Standards (NSPS)
Any new or modified source is required to comply with Regulation 10, Standard of Performance for New Stationary Sources – which is Title 40, Part 60 of the Code of Federal Regulation incorporated by reference. According to 40 CFR Section 60.4200(a)(1)(i) engines are subject to 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines if they have a displacement of less than 30 liters per cylinder where the model year is 2007 or later, for engines that are not fire pump engines. S-800 is a 4 cylinder engine with a total displacement of 4.45 liters, so each cylinder has a volume less than 30 liters and this engine is subject to NSPS

Section 60.4205(b) requires that owners and operators of these engines comply with the emission standards in Section 60.4202, which refers to 40CFR89.112 and 40CFR89.113 for all pollutants. S-800 meets the limits for engines between 175 hp and 300 hp, as shown in the table below:

Pollutant	**Manufacturer's Performance Data (g/bhp-hr)**	**40CFR89.112 Emission Limits (g/bhp-hr)**
$PM_{10}/PM_{2.5}$	0.10	0.15
NMHC + NOx	2.79	3.0
CO	0.66	2.61

Sections 60.4206 and 60.4211(a) require that the owner/operator operate and maintain the engine according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine. The owner/operator is expected to comply with this requirement.

Section 60.4207(b) requires that by October 1, 2010, the owner/operator must use fuel that complies with 40 CFR 80.510(b). This means that the fuel must have a sulfur content of 15 parts per million (ppm) maximum, and a cetane index of 40 or a maximum aromatic content of 35 volume percent. The owner/operator is expected to comply with this requirement because CARB allows only ultra-low sulfur diesel to be used in California.

Section 60.4209(a) requires a non-resettable hour meter. S-800 will be subject to standard permit conditions that includes this requirement. S-800 will comply with the requirements of Section 60.4211(c) because it has been certified in accordance with 40 CFR Part 89 under engine family HCEXL0275AAK. Standard permit conditions limiting operation to 50 hours per year for reliability testing except for operating during emergencies at S-800 ensure that it will comply with the requirement in Section 60.4211(e) which limits such operation to less than 100 hours per year.

The owner/operator is not required to perform tests in accordance with Section 60.4212 or 60.4213.

Section 60.4214(b) states that owner/operators do not have to submit an initial notification to EPA for emergency engines.

Because the engine does not have a diesel particulate filter, the owner/operator is not subject to Section 60.4214(c).

The owner/operator is required to comply with certain sections of 40 CFR 60, Subpart A, General Provisions. The owner/operator is expected to comply with this requirement.

<u>Regulation 11 – National Emission Standards for Hazardous Air Pollutants (NESHAP)</u>
This engine is subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it is located at a major facility for hazardous air pollutants and it is a new source. It is subject per section 63.6585. Per 63.6590(c), it states that the new engine must comply with 40 CFR Part 60 IIII, and compliance with this subpart commences upon startup of the new engine per 63.6595(a)(5). The MACT ZZZZ requirements for these engines subject to NSPS IIII are limited or none. Emission and operating limitations are not applicable as this engine is less than 250 BHP. The facility will ensure that the source complies at all times per section 63.6605 with emission and operating limitations. Testing and initial compliance requirements are not applicable for this source per 63.6610. The source is subject to minimizing idling time and startup time to no more than 30 minutes per 63.6625(h). The source is subject to 63.6640(d) which deals with deviations

from emission or operating limitations that occur during the first 200 hours of operation from the engine startup are not considered violations.

State Requirements: CARB Stationary Diesel Engine ATCM

The State Office of Administrative Law approved the Airborne Toxic Control Measure (ATCM) on November 8, 2004. State law requires the local Air Districts to implement and enforce the requirements of the ATCM. Effective January 1, 2005, there is a prohibition on the operation of new diesel emergency standby engines greater than 50 bhp unless the following operating requirements and emission standards are met:

"Stationary Diesel Engine ATCM" section 93115.6 (3)(A), title 17, CA Code of Regulations, Amended May 2011.

1. New stationary emergency standby diesel-fueled engines (>50 bhp) shall:
   a. meet the applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in the following Table Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines, in effect on the date of acquisition or submittal, and
   b. after December 31, 2008, be certified to the new nonroad compression-ignition (CI) engine emission standards for all pollutants for 2007 and later model year engines as specified in 40 CFR, PART 60, Subpart III-Standards of Performance for Stationary Compression Ignition Internal Combustion Engines(2006); and
   c. not operate more than 50 hours per year for maintenance and testing purposes.

2. The District may allow a new stationary emergency standby diesel-fueled Cl engine (> 50 hp) to operate up to 100 hours per year for maintenance and testing purposes on a site-specific basis, provided the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.

Table 1 of ATCM

Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engine g/bhp-hr (g/kW-hr)				
Maximum Engine Power	**Model Year**	**PM**	**NHMC+NOx**	**CO**
50 ≤ HP < 75 (37 ≤ kW < 56)	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	2008+		3.5 (4.7)	
75 ≤ HP < 100 (56 ≤ kW < 75)	2007	0.15 (0.20)	5.6 (7.5)	3.7 (5.0)
	2008+		3.5 (4.7)	
100 ≤ HP <175 (75 ≤ kW < 130)	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
	2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			
600 ≤ HP < 750 (450 ≤ kW < 560)	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
	2008+			

HP > 750 (kW > 560)	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
	2008+			

This emergency standby diesel engine (S-800) is in compliance with the above ATCM requirements. The diesel engine will operate for no more than 50 hours per year for maintenance and reliability testing. This engine is subject to the Current off-road CI engine standards for HC, NOx, NMHC+NOx and CO. As shown in the Table 4, the engine meets these requirements.

	Emissions from S-800 g/bhp-hr	ATCM Standard g/bhp-hr
NMHC+NOx	2.79	3.0
NOx	2.65	2.85
NMHC (POC)	0.14	0.15
CO	0.66	2.6
$PM_{10}/PM_{2.5}$	0.10	0.15

CONDITIONS

I recommend the following permit condition for S-800:

COND# 22850 ----------

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.
   [Basis: "Regulation 2-5]

2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]
4. Records: The owner/operator shall maintain the following monthly records in a District approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log

entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
a. Hours of operation for reliability-related activities (maintenance and testing).
b. Hours of operation for emission testing to show compliance with emission limits.
c. Hours of operation (emergency).
d. For each emergency, the nature of the emergency condition.
e. Fuel usage for each engine(s).
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation: If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply: The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:
   a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
   b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.
   "School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

RECOMMENDATIONS:

I recommend that an Authority to Construct be issued for the following:

S-800 Emergency Standby Diesel Generator Set
2016 Cummins Model: QSB5-G6
EPA Family Name: HCEXLO275AAK-021
208 BHP, 1.41 MMBTU/hr

Irma Salinas
Principal Air Quality Engineer

Date:

Appendix 1 SOB for A/N 29320- Emergency Diesel Generator

This is a minor permit revision pursuant to Regulation 2, Rule 6, Section 215.

Title Page- Facility name will be changed

Section II. Equipment:

Table IIA- Permitted Sources: Will be revised to include S-800

S-800 Emergency Diesel Generator Cummins; 272 in^3 displacement; diesel fuel; 208 BHP

Section IV. Source-Specific Applicable Requirements:

Table IV-CN Source Specific Applicable Requirements- will be added to include S-800 and 40 CFR Part 60 subpart IIII and appropriate regulations both District and SIP and permit condition # 22850

Table IV-CN
Source-specific Applicable Requirements
S-800, Diesel Engine Backup Generator

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
SIP Regulation 1	**General Provisions and Definitions (6/28/99)**		
1-110.2	Exclusions for ICE engines used as emergency standby source of power	Y	
BAAQMD Regulation 6, Rule 1	**Particulate Matter- General Requirements (8/1/2018)**		
6-1-303	Ringelmann Number 2 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Total Suspended Particulate (TSP) Concentration Limits	N	
6-1-401	Appearance of Emissions	N	
6-1-601	Applicability of Test Methods	N	
SIP Regulation 6	**Particulate Matter and Visible Emissions (9/4/98)**		
6-303	Ringelmann Number 2 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-401	Appearance of Emissions	Y	
6-600	Particulate Matter, Sampling, Sampling Facilities, Opacity Instruments and Appraisal of Visible Emissions	Y	

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 9, Rule 1	**Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)**		
9-1-301	Limitations on Ground Level Operations	N	
9-1-302	General Emission Limitation	N	
9-1-304	Fuel Sulfur Content Limitation	N	
SIP Regulation 9 Rule 1	**Inorganic Gaseous Pollutants- Sulfur Dioxide (6/8/99)**	Y	
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-302	General Emission Limitations		
9-1-304	Fuel burning sulfur content limitation		
BAAQMD Regulation 9, Rule 2	**Inorganic Gaseous Pollutants- Hydrogen Sulfide (10/6/99)**	N	
9-2-301	Limitation of Hydrogen Sulfide	N	
BAAQMD Regulation 9, Rule 8	**Inorganic Gaseous Pollutants-Nitrogen Oxides from Stationary Engines (7/25/07)**		
9-8-110	Exemptions		
9-8-110.5	Limited Exemption Emergency Standby Engines	N	
9-8-330	Emergency Standby Engines, Hours of Operation	N	
9-8-330.1	Unlimited hours for emergency use	N	
9-8-330.3	50 hours for reliability and maintenance	N	
9-8-502	Recordkeeping		
9-8-502.1	On a monthly basis recordkeeping for the number of hours engine is fired		
9-8-530	Emergency standby engines, monitoring and recordkeeping	N	
40 CFR Part 60 subpart IIII	**Standards of Performance for Stationary compression Ignition Internal Combustion Engines (7/07/2016)**	Y	
60.4200	Applicability	Y	
60.4202(b)(2)	For 2011 model year and later, certification emission standards for new nonroad CI engines in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants	Y	
60.4205(b)	Owner or Operator Requirement Standards to comply with 60.4202	Y	
60.4206	Requirement to meet standards for the entire life of the engine	Y	
60.4207(b)	Diesel Fuel Requirements for stationary CI ICE per 40 CFR 80.510(b)	Y	
60.4209	Monitoring Requirements for stationary CI ICE	Y	
60.4211	Owner or operator must comply with the emission standards specified in this subpart except as permitted under paragraph (g) of this section	Y	
60.4211(a)(3)	Meet the requirements of 40 CFR parts 89,94 and/or 1068 as they apply	Y	
60.4211(c)	2007 model year and later stationary CI IC engine must comply with the emission standards specified in 60.424(b) or 60.4205(b). Engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section	Y	

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.4211(f)	An emergency stationary ICE must be operated according to requirements in (f)(1) - (3) of IIII. Any operation except emergency operation, maintenance and testing, emergency demand response, and non-emergency operation for 50 hrs/yr, is prohibited.	Y	
60.4211(f)(1)	No time limit on the use of emergency stationary ICE in emergency situations.	Y	
60.4211(f)(2)	For the purposes listed in paragraphs (f)(2)(i) - (iii), the emergency stationary ICE may be operated for a maximum of 100 hrs/ calendar year.	Y	
60.4211(f)(2)(i)	Emergency stationary ICE may be operated for maintenance checks and readiness testing.	Y	
60.4211(f)(2)(ii)	Emergency stationary ICE may be operated for emergency demand response for periods	Y	
60.4211(f)(2)(iii)	Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.	Y	
60.4214	Owner/operator Notification, reporting and recordkeeping requirements for CI ICE	Y	
60.4214(b)	Initial notification is not required for emergency engines	Y	
40 CFR Part 63 Subpart ZZZZ	**NESHAPS for Stationary Reciprocating Internal Combustion Engines (RICE) (1/30/2013), Requirements for New Emergency Stationary RICE <500 BHP**	**Y**	**See 63.6595(b)**
63.6585	Applicability stationary RICE at a major or area source of HAP emissions	Y	
63.6585(a)	Definition: stationary RICE	Y	
63.6585(b)	Definition: major source of HAPs	Y	
63.6590	Affected sources	Y	
63.6590(a)	Affected source is any existing, new, or reconstructed stationary RICE located at major source of HAP emissions	Y	
63.6590(a)(2)	A New stationary RICE is:	Y	
63.6590(a)(2)(ii)	Rating < 500 bhp located at major source of HAP emissions, constructed on or after 6/12/2006	Y	
63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.	Y	
63.6590(c)(6)	New Emergency Stationary RICE <= 500 bhp at a major source of HAP emissions are subject only to 40 CFR 60 Subpart IIII for compression ignition engines	Y	
63.6640(f)(3)	Operation of emergency stationary RICE engine located at major sources of HAP may be operated for up to 50 hours per calendar year in non-		

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
	emergency situations.		
Section 93115, Title 17, CCR	**CARB ATCM Airborne Toxic Control Measure for Stationary Compression Ignition Engines amended May 19, 2011**		
93115.1	Purpose is to reduce diesel PM and criteria pollutant emissions from CI engines		
93115.2(b)	Applicability of ATCM for engines with > 50 BHP	N	
93115.4	Definitions		
93115.4(50)	New or New CI Engine – installed after January 1, 2005 or a 2004 or 2005 model year engine purchased prior to January 1, 2005 for use in California or reconstructed after January 1, 2005		
93115.5(a)	Fuel and fuel additive Requirements for New and In-Use Stationary CI Engines that are > 50BHP	N	
93115.6	Emergency Standby Diesel-Fueled CI Engine (>50 bhp) Operating Requirements and Emission Standards		
93115.6(a)	New Emergency Standby Diesel-Fueled Compression Engine (> 50 bhp) Operating Requirements and Emission Standards		
93115.6(a)(3)(A)	PM Emission Standards & Maximum Hours of Operation for Maintenance and Testing	N	
93115.6(a)(3)(A)(1)	New stationary emergency standby diesel fueled engines >50 BHP		
93115.6(a)(3)(A)(1)(a)	Meet applicable emission standards for all pollutants for the same model year and maximum horsepower rating as specified in Table 1 Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines		
93115.6(a)(3)(A)(1)(b)	After December 31, 2008, be certified to the new nonroad compression-ignition (CI) engine emission standards for all pollutants for 2007 and later model year engines as specified in 40 CFR Part 60, Subpart IIII-Standards of Performance for Stationary Compression Ignition IC Engines (2006); and		
93115.6(a)(3)(A)(1)(c)	Not operate more than 50 hours per year for maintenance and testing purposes, except as provided in 93115.6(a)(3)(a)2. This subsection does not limit engine operation for emergency use and for emission testing to show compliance with 93115.6(a)(3).		
93115.6(a)(3)(A)(2)	The District may allow a new stationary emergency standby diesel-fueled CI engine (>50) to operate up to 100 hours per year for maintenance and testing purposes on a site-specific basis, provided the diesel PM emission rate is less than or equal to 0.01 g/bhp-hr.		
93115.6(a)(3)(A)(3)(b)	The District may establish more stringent hours of operation and emission standards		
93115.10	Recordkeeping, Reporting and Monitoring Requirements	N	
93115.10(a)	Reporting	N	

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
93115.10(b)	Demonstration of Compliance with Emission Limits	N	
93115.10(d)	Monitoring Equipment	N	
93115.10(d)(1)	A non-resettable hour meter with a minimum display of 9999 hours shall be installed upon engine installation, or by no later than January 1, 2005; on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 931115.8(a) unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history		
93115.10(d)(3)	The District APCO may require the owner or operator to install and maintain additional monitoring equipment for the particular emission control strategy(ies) used to meet the requirements of sections 93115.6, 93115.7, or 93115.8(a)		
93115.10(f)	Monthly Log: Data Required	N	
93115.10(f)(2)	Data Log Retention	N	
93115.12	Tiered Compliance Schedule	N	
93115.13	Compliance Demonstration	N	
93115.15	Severability	N	
BAAQMD Condition 22850	This Condition applies to S-800.		
part 1	50 hours/year for maintenance and testing. (Stationary Diesel Engine ATCM" section 93115, title 17 CCR)	N	
part 2	Unlimited Emergency Use, (Stationary Diesel Engine ATCM" section 93115, title 17 CCR)	N	
part 3	Totalizing Meter, (Stationary Diesel Engine ATCM" section 93115, title 17 CCR)	N	
part 4	Recordkeeping, (Stationary Diesel Engine ATCM" section 93115, title 17 CCR, Regulation 2-6-501)	N	
part 5	Near School Conditions, (Stationary Diesel Engine ATCM" section 93115, title 17 CCR)	N	

Section VI: Permit Conditions:

Table VI- Permit Conditions- will be revised to include the permit condition # 22850 for S-800

Section VII: Applicable Emission Limits & Compliance Monitoring Requirements

Will be revised to include S-800 in Table VII-CN

Table VII-CN
Applicable Limits and Compliance Monitoring Requirements
S-800 Diesel Engine Backup Generator

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD 6-1-303	N		≥ Ringelmann No. 2 for no more than 3 minutes/hour	None	N	N/A
Opacity	SIP 6-303	Y		≥ Ringelmann No. 2 for no more than 3 minutes/hour	None	N	N/A
Visible Emissions	6-1-305	N		Prohibition of nuisance	None	N	N/A
Visible Emissions	SIP 6-305	N		Prohibition of nuisance	None	N	N/A
FP	BAAQMD 6-1-310	N		0.15 grain/dscf	None	N	N/A
FP	SIP 6-310	Y		0.15 grain/dscf	None	N	N/A
SO_2	BAAQMD 9-1-301	N		Ground level concentration ≤ 0.5 ppm for 3 minutes, 0.25 ppm for 60 minutes, or 0.05 over 24 hours	None	N	N/A
SO_2	BAAQMD 9-1-304	N		Fuel sulfur content ≤ 0.5% by weight, unless the SO2 concentration in the resulting emissions ≤ 300 ppm, dry	None		N/A
SO_2	40 CFR 60.4207(b)	Y		Use diesel fuel that meets 15 ppm sulfer content per 40 CFR 80.510(b) for nonroad disel	None	N	N/A
H_2S	BAAQMD 9-2-301	N		Limitation of Hydrogen Sulfide: within 24 hour period can not exceed 0.06 ppm averaged over 3 consecutive minutes or 0.03	None	N	N/A

				ppm averaged over any 60 consecutive minutes			
Reliability Related Hours	BAAQMD 9-8-330, Condition	N		Operation for reliability-related activities ≤ 50 hours/calendar year	BAAQMD 9-8-530,	C	Totalizing meter, records
Hours of operation	Title 17, California Code of Regulations section 93115.6(a)(3)(A)(1)(c)	N		< 50 hours/year for maintenance and testing	CCR, Title 17, Section 93115.10(d)	C	Totalizing meter records
Hours of operation	40 CFR 60.4211(f)	Y		50 hours/year non-emergency operation	40 CFR 60.4209(a)	C	Totalizing meter
Hours of operation	Condition 22850, Part 1 (S-800 Only)	N		Operation for reliability-related activities ≤ 50 hours/calendar year	BAAQMD 9-8-530, Condition 22850, Part 3	C	Totalizing meter, records
HC	40 CFR 60.4205(a)	Y		0.15 g/bhp-hr	40 CFR 60.4211(a)	C	Operate and maintain per mfg instructions
NOx	40 CFR 60.4205(a)	Y		2.83 g/bhp-hr	40 CFR	C	Operat

					60.4211(a)		e and maintain per mfg instructions
CO	40 CFR 60.4205(a)	Y		2.61 g/bhp-hr	40 CFR 60.4211(a)	C	Operate and maintain per mfg instructions
PM	40 CFR 60.4205(a)	Y		0.15 g/bhp-hr	40 CFR 60.4211(a)	C	Operate and maintain per mfg instructions