

Bay Area Air Quality Management District

375 Beale Street
San Francisco, CA 94105
(415) 771-6000

**Permit Evaluation
and
Statement of Basis
for a
Minor Revision
to the
MAJOR FACILITY REVIEW PERMIT**

For

CRITERION CATALYSTS & TECHNOLOGIES, L.P.

Facility #A0227

Facility Address:

2840 Willow Pass Road
Pittsburg, CA 94565

Mailing Address:

P.O. Box 5159
Pittsburg, CA 94565-0659

Application Engineer: Dharam Singh

Site Engineer: Dharam Singh

November 2018

Application: 28454

TABLE OF CONTENTS

A.	Background	2
B.	NSR Permit Evaluation	3
C.	Supplemental Information	8
I.	Standard Conditions	8
II.	Equipment	8
III.	Generally Applicable Requirements	8
IV.	Source-Specific Applicable Requirements	8
V.	Schedule of Compliance	8
VI.	Permit Conditions	9
VII.	Applicable Limits and Compliance Monitoring Requirements	9
VIII.	Test Methods	10
IX.	Permit Shield:	10
X.	Revision History	10
XI.	Glossary	10
D.	Alternate Operating Scenarios:	10
F.	Differences between the Application and the Proposed Permit:	10

Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

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

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

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is **A0227**.

Current Permit Action

Permit condition ID #9315 will be amended by including the temperature excursion language similar to the standard template condition for thermal oxidizer in the Permit Handbook. As described in the attached NSR permit evaluation, there is no net increase in emissions at the facility resulting from this action. Because the proposed revisions to the Title V permit do not meet the definition of significant revision per 2-6-226 or the definition of administrative amendment per 2-6-201, they are considered to be a minor revision and do not require public notice.

Permit to operate for S510 with amended permit condition, covered by Application # 28453, was issued on 4/25/2018.

B. NSR Permit Evaluation

**ENGINEERING EVALUATION REPORT
CRITERION CATALYSTS & TECHNOLOGIES, LP
PLANT NUMBER 227
APPLICATION NUMBER 28453**

2840 Willow Pass Road
Bay Point, CA 94565

BACKGROUND

Criterion Catalysts & Technologies, LP (Criterion) has been operating a catalyst manufacturing plant in Bay Point, CA. The facility is a Title V facility. There are five catalyst manufacturing plants at this facility. One of them, H2 Plant is consisted of S510 (H2 Kiln) and associated sources. The Kiln, abated by a baghouse, A-54 for PM-10, an afterburner, A-56 for ammonia, is subject to permit condition ID #9315. Part 9 of the condition requires afterburner to be operated at a minimum temperature of 1400 deg. F. The temperature limit is instantaneous and does not address excursions, which are part of routine operation. This results in filings of non-compliance for short or very slight temperature excursions below the 1400 deg. F limit. Several of these episodes resulted in Notices of Violations, which could be minimized by including an excursion language.

Criterion submitted this application proposing addition of excursion language as per thermal oxidizer template conditions given in the Permit Handbook. In order to develop an excursion language, specific to this case, a Source Trial Test Plan (STTP) to evaluate emissions at several operating temperatures outside the permitted temperature limit was submitted by Criterion, which was conditionally approved by the Director of Enforcement in a letter dated 4/18/2017 and by Source Test Section in an email to the applicant.

A District approved trial test was conducted on May 3-4, 2017, which demonstrated that some short-term excursions would not result in exceeding primary pollutant ammonia and secondary pollutants NOx and CO emission limits in the permit conditions. The test results are also the basis to develop temperature excursion language for the afterburner, A56. A meeting was arranged on 9/14/2017 at the District with Criterion and the consultant to discuss the results of the trial test and to gather more information/clarifications, which was provided by Criterion in letters dated 9/29/2017 and 1/23/2018. Criterion proposed to operate the afterburner at 1550 deg. F controller set point and raise the minimum operating temperature from 1400 deg. F to 1450 deg. F after review of ammonia based runs of last 3 years, and also because NOx and CO emissions exceeded the current limits at 1400 deg. F during the trial test. The proposed excursion condition is reasonable/acceptable to the District and is incorporated in the permit condition ID #9315.

The application covers the following sources:

S-510 H2 Kiln, abated by A-54 & A-56.
A-54 Baghouse
A-56 Afterburner.

EMISSIONS CALCULATIONS

Ammonia, NOx, and CO emissions from S-510 are limited to the current limits in condition ID #9315. Criterion has not proposed any change to these limits.

There will not be any increase in PM10 emissions. The grain loading and the exhaust flow rates from the baghouse, A-54 will not change.

PLANT CUMULATIVE INCREASE

None.

STATEMENT OF COMPLIANCE

The kiln, S-510, will be expected to comply with the all applicable regulatory requirements and amended permit conditions.

The project is categorically exempt from CEQA under Regulation 2-1-312.1

PERMIT CONDITIONS

Permit condition ID #9315 is revised by incorporating temperature excursion language as proposed by Criterion. The revisions are shown below in strikeout/underlined format.

COND# 9315 -----

For S504 through S506, H2 Blending tanks,
S507, H2 Liquid/solids blender,
S509, H2 kiln feed conveyor,
S510, H2 Kiln, and
A54, H2 Kiln Baghouse and A56 - H2 Afterburner
(Revision: A #7760; A #25461; A #28453)

1. The owner/operator shall not process or handle materials which contain more than 10% of nickel or nickel compounds by weight averaged over any consecutive 12-month period. (basis: Toxic risk screening analysis)
2. The owner/operator shall not exceed a total material throughput limit of 52 ton per day at S510. (basis: cumulative increase)
3. The owner/operator shall not exceed visible particulate emissions from the area dust collector A54 of Ringelmann 1.0 for a period or periods aggregating more than three minutes in any hour, or result in fallout on adjacent property in such quantities as to cause a public nuisance per Regulation 1-301. (basis: Regulation 1-301, 6-1-301; SIP Regulation 6-301)
4. The owner/operator shall not exceed the airflow rate from A54, dust collector, of 7,500 SCFM. The outlet loading of the dust collector A54 shall not exceed 0.006 grain/dscf. (basis: TBACT; cumulative increase)

5. The owner/operator shall abate emissions from sources S504 through S507, S509, and S510 by the properly maintained dust collector, A54, at all times that any of the sources S504 through S507, S509, and S510 are in operation. A District approved bag failure warning device must be in operation at all such times.
(basis: Regulation 6-1-301, 6-1-310, 6-1-311; SIP Regulation 6-301, 6-310, 6-311; cumulative increase)
6. The owner/operator of afterburner, A56, shall maintain the afterburner in proper operating condition, including a dedicated fuel meter.
(basis: cumulative increase)
7. The owner/operator of afterburner, A56, shall burn only natural gas, and shall have a District approved temperature monitor. (basis: cumulative increase)
8. The CO contribution from A56 shall not exceed 400 ppmv dry at 3% oxygen.
(basis: cumulative increase)
9. When the afterburner, A56, is being used to abate emissions from S504 through S507, S509, and S 510, the owner/operator shall operate the afterburner, A56, at a minimum operating temperature of ~~1450~~ degree Fahrenheit using a temperature controller setpoint of at least 1550 degree Fahrenheit, and a minimum residence time of 0.4 second.
(basis: cumulative increase; BACT/TBACT)
 - 9.1 The temperature limit in Part 9.1 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller setpoint complies with the temperature limit. An "Allowable Temperature Excursion" is one of the following:
 - a. A temperature excursion not exceeding 20 degree Fahrenheit; or
 - b. A temperature excursion for a period or periods which when combined are less than or equal to 30 minutes in any hour; or
 - c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all the following three criteria are met.
 - i. the excursion does not exceed 50 degree Fahrenheit;
 - ii. the duration of excursion does not exceed 24 hours; and
 - iii. the total number of such excursion does not exceed 12 per any consecutive 12-month period.

Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the excursion limit of 12. (basis: Regulation 2-1-403)
 - 9.2 For each "Allowable Temperature Excursion" that exceeds 20 degree Fahrenheit and 15 minutes in duration, the owner/operator shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum period of five years from the date of entry, and shall be made available to the District upon request. Records shall include at

least the following information:

- a. Temperature controller setpoint;
- b. Starting date and time, and duration of each "Allowable Temperature Excursion";
- c. Measured temperature during each "Allowable Temperature Excursion";
- d. Number of "Allowable Temperature Excursions" per month, and total number for the consecutive 12-month period;
- e. All strip charts or other temperature records.

10. The owner/operator shall operate S504 through S507, S509, and S510 so that the following emission limits are not exceeded:

- a. NOx 120 lb/day
- b. NH3 2,200 lb/day

Whenever the total ammonia input, calculated as equivalent NH3, to sources S504, through S507, S509, and S510 exceeds 2,200 lb/day, the owner/operator shall abate sources S504 through S507, S509, and S510 by the afterburner, A56. When the Afterburner, A56, is in operation, the emissions from A56 shall not exceed the following limits:

NOx = 120 lb/day
NH3 = 200 lb/day

A day shall be defined as an operating day of 24 hours from midnight to midnight. A year shall be defined as any consecutive 12 month period.
(basis: cumulative increase)

11. Notwithstanding the terms of part 10, the operation of the afterburner A56 may be waived for a particular catalyst product and ammonia input if the owner/operator demonstrates through a District approved source test(s) representative of that catalyst product and ammonia input, that the ammonia emissions from sources S504 through S507, S509, and S510 do not exceed 2,200 lb/day.
(basis: cumulative increase)
12. The owner/operator shall not exceed visible particulate emissions from A56 of Ringelmann 1.0 for a period or periods aggregating more than three minutes in any hour, or result in fallout on adjacent property in such quantities as to cause public nuisance per Regulation 1-301. (basis: Regulation 6-1-301, 1-301; SIP Regulation 6-301)
13. The owner/operator of A56 shall conduct a District approved source test annually with the afterburner abatement device in operation and

not in operation to demonstrate a net reduction of NH3 emissions from uncontrolled levels per operating day, and to demonstrate compliance with parts 8, 10, and 11. At a minimum, the following emissions will be measured (ppm, lb/hr, lb/day): NOx, NH3, O2, CO, and non-methane hydrocarbons.

The source tests shall be conducted on representative materials processed at S504 through S507, S509, and S510 with representatively high NH3 emissions and representatively high NOx emissions to demonstrate compliance with parts 8, 10 and 11. The test results shall be reported to the District within 30 days of completion of the test.

The owner/operator of A56 shall conduct the source tests annually with no more than 12 months between tests. Furthermore, the District may require at its discretion the owner/operator to conduct up to an additional two source tests annually to demonstrate continuing compliance with parts 8, 10 and 11.
(basis: cumulative increase)

14. To demonstrate compliance with the above parts, the owner/operator shall maintain the following records in a District approved log and make available for District inspection for at least five years from the date on which a record was made.
 - a. The natural gas usage of A56, totaled on a monthly basis
 - b. The days of operation and type of material processed, daily throughput of each material and daily input of ammonia, calculated as equivalent NH3 at the Calciner Oven, S510, totaled on a monthly basis, as necessary to verify compliance with the emission limits of parts 10 and 11 using the emission factors generated in the source tests of part 13.
 - c. All source tests results conducted for compliance with parts 8, 10 and 11.
(basis: cumulative increase)

RECOMMENDATIONS

It is recommended that Criterion be issued an amended Permit Condition ID #9315 for the following source.

S-510 H2 Kiln, abated by A-54 & A-56.
A-54 Baghouse
A-56 Afterburner.

BY: _____
Dharam Singh, PE
Air Quality Engineer II

C. Supplemental Information

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities.

Changes in this action

None.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Changes in this action

None.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit

Changes in this action

None.

IV. Source-Specific Applicable Requirements

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit.

Complex Applicability Determinations

This permit did not require any complex applicability determinations.

Other changes in this action

None.

V. Schedule of Compliance

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

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved

and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

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

VI. Permit Conditions

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.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

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

Changes in this action

Permit condition ID #9315 will be revised by including the temperature excursion language.

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.

The District has reviewed all monitoring and has determined the existing monitoring is adequate.

Changes in this action

Table VII-Q will be modified by changing the temperature limit and citation of limit.

VIII. Test Methods

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

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

No changes are proposed for this section.

IX. Permit Shield:

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

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

This facility has no permit shields.

This permit has no streamlining.

No changes are proposed for this section.

X. Revision History

This section contains the details of issuance and revisions for each permit.

XI. Glossary

This section contains terms that may be unfamiliar to the general public or EPA.

No changes are proposed for this section.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

F. Differences between the Application and the Proposed Permit:

There is no difference between the application and the proposed permit.

APPENDIX A
GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority which allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAPCOA

California Air Pollution Control Officers Association

CEM

Continuous Emission Monitor

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.

CO

Carbon Monoxide

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

dscf

Dry Standard Cubic Feet

EPA

The federal Environmental Protection Agency.

Excluded

Not subject to any District regulations.

FDOC

Final Determination of Compliance (FDOC), prepared pursuant to District Regulation 2, Rule 3, Power Plants.

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.

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.

HRSG

Heat Recovery Steam Generator

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.

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.

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)

NOx

Oxides of nitrogen.

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.)

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.

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.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM10

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

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.

PUC

Public Utilities Commission (California)

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

THC

Total Hydrocarbons (NMHC + Methane)

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)

TPH

Total Petroleum Hydrocarbons

TRMP

Toxic Risk Management Plan

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m ²	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
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