



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
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January 14, 1998

Mr. Brian Hanson, Plant Manager
General Chemical Corporation
655 North Texas Road
Anacortes, WA 98221-8603

Dear Mr. Hanson:

Re: General Chemical Corporation PSD Permit

I received no comments or response to my phone calls regarding the draft amendment to PSD 94-01. Ecology is therefore pleased to issue the final permit.

Please contact me at (360) 407-6896 if you need clarification on any of these issues.

Sincerely,

Richard B. Hibbard, PE
Environmental Engineer

RH:kh
Enclosure

Cc: Valerie Lagen, NWAPA
Ray Nye, EPA

RECEIVED

JAN 20 1998

Northwest Air Pollution
Authority



WASHINGTON DEPARTMENT OF ECOLOGY
PO BOX 47600
OLYMPIA, WASHINGTON 98504-7600

IN THE MATTER OF:]	
General Chemical]	NO. PSD 94-01 Amendment 1
655 North Texas Road (March Point)]	FINAL DETERMINATION
Anacortes, WA 98221]	OF PSD APPLICATION

Pursuant to the U.S. Environmental Protection Agency (EPA) regulations for the Prevention of Significant Deterioration (PSD) set forth in Title 40, Code of Federal Regulations, Part 52 and regulations set forth in the Washington Administrative Code 173-400-141 and based on the complete Prevention of Significant Deterioration application submitted by General Chemical and the technical analysis performed by the Department of Ecology (Ecology), dated August 16, 1994, Ecology now finds the following:

FINDINGS

1. General Chemical debottlenecked its Plant 3 sulfuric acid manufacturing plant in Anacortes. The project consisted of replacing a 250 horsepower (hp) fan with a 450 hp fan, enlarging the catalytic converters to maintain the required catalyst loadings at the higher product throughput and a new heat exchanger was added to control the extra heat from the increased production. Production of sulfuric acid increased from 180 tons per day to 275 tons per day. The spent acid feed rate increased from 109 tons per day (as 100% acid) to 171 tons/day. The waste gas hydrogen sulfide feed rate will increase from 22.8 tons/day to 35.8 tons/day.
2. General Chemical qualifies as a major source because it is a sulfuric acid plant that emits more than 100 tons per year of sulfur dioxide (SO₂). It is located in an area which is designated Class II for the purposes of PSD evaluation under 40 CFR 52.21 dated July 1, 1993.
3. The emission of SO₂ and sulfuric acid mist are subject to new source performance standards as specified in Title 40 Code of Federal Regulations (CFR) Part 60, Subpart H as of July 1, 1993.
4. The site is within an area that is in attainment with regards to the state and national air quality standards.
5. The facility generates up to 262 tons per year of sulfur dioxide.
6. The facility generates up to 6.1 tons per year of additional sulfuric acid mist. This modification was below the PSD threshold of 7 tons per year.

- 1 7. The facility generates up to 17 tons per year of nitrogen oxides which is below the PSD threshold of
2 40 tons per year.
- 3 8. The emissions of sulfur dioxide were subject to PSD review.
- 4 9. Best available control technology (BACT) is being used to control air pollutants from the proposed
5 project.
- 6 10. The project sulfur dioxide emissions consume up to 110 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of the
7 3-hour $512 \mu\text{g}/\text{m}^3$ increment, $42 \mu\text{g}/\text{m}^3$ of the 24-hour, $91 \mu\text{g}/\text{m}^3$ increment and $4.5 \mu\text{g}/\text{m}^3$ of the
8 annual $20 \mu\text{g}/\text{m}^3$ increment. The project has no other significant impact on air quality.
- 9 11. The project has no noticeable affect on industrial, commercial, or residential growth.
- 10 12. Visibility is not impaired in any Class I area due the proposed emissions.
- 11 13. Ambient pollutant concentrations in any Class I area have not changed due to the project.
- 12 14. Ecology finds that all requirements for PSD have been satisfied. Approval of the PSD application is
13 granted subject to the following conditions.
- 14 15. The use of the existing double absorption technology as proposed by General Chemical is BACT.

16 APPROVAL CONDITIONS

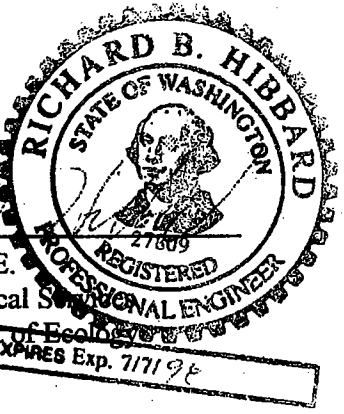
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- 18 1. SO_2 emissions from the common stack for Plants 1, 2, and 3 shall not exceed 315 parts per million
19 (ppm) of dry standard cubic foot stack gas on a three hour average or 59.9 pounds per hour on a
20 three hour average, whichever is more stringent. Compliance shall be determined by a continuous
21 emission monitoring system. The continuous emission monitoring system (CEMS) used by General
22 Chemical to measure SO_2 emissions shall, at a minimum, conform with EPA Title 40 Code of the
23 Federal Regulations, Part 60, Appendix B Performance Specifications as of July 1, 1993. The
24 continuous emission monitoring quality control plan conforming with 40 CFR 60 Appendix F may
25 be required to be periodically updated.
- 26 2. Opacity from the common stack for Plants 1, 2, and 3 shall not exceed 10 percent for more than six
27 minutes in any one-hour period as measured by EPA Method 9.
- 28 3. Sampling ports and platforms must be provided on the common stack. The ports must meet the
29 requirements of Reference Method 1 of 40 CFR, Part 60, Appendix A, dated July 1, 1993. Other
30 arrangements may be acceptable if approved by Ecology prior to installation. Adequate permanent
31 and safe access to the test ports must be provided.

- 1 4. CEMS and process data shall be reported in written form to the Northwest Air Pollution Authority
2 (NWAPA) at least monthly (unless a different testing and reporting schedule has been approved
3 by Ecology) within thirty days of the end of each calendar month and in a format approved by
4 Ecology which shall include but not be limited to the following:
- 5 4.1 The monthly average in the units of the standard for each pollutant monitored.
 - 6 4.2 Duration of CEM monitor downtime, due to:
 - 7 a. monitor equipment malfunction,
 - 8 b. non-monitor equipment malfunction,
 - 9 c. quality assurance calibration,
 - 10 d. other causes, and
 - 11 e. percentage of time monitor was not operating as compared to total source operating
12 time.
 - 13 4.3 Results of any monitor audits or accuracy checks.
 - 14 4.4 Results of any stack tests.
- 15 5. For each occurrence of monitored emissions in excess of the standard the report shall include the
16 following:
- 17 5.1 The time of the occurrence.
 - 18 5.2 Magnitude of the emission or process parameters excess.
 - 19 5.3 The duration of the excess.
 - 20 5.4. The probable cause, including startup/shutdown, control equipment problems, process
21 equipment problems, other causes and the percentages of time of excess emissions as
22 compared to total operating time.
 - 23 5.5 Corrective actions taken or planned.
 - 24 5.6 Any other agency contacted.
- 25 6. Operating and maintenance manuals for all equipment that has the potential to affect emission to
26 the atmosphere have been developed and will be followed. Copies of the manuals shall be
27 available to Ecology. Emissions that result from a failure to follow the requirements of the
28 manuals may be considered proof that the equipment was not properly operated and maintained.
29 Operation of the equipment must be conducted in compliance with all data and specifications
30 submitted as part of the PSD application unless otherwise approved by Ecology.
- 31 7. Any activity that is undertaken by General Chemical or others, in a manner that is inconsistent
32 with the application and this determination, shall be subject to departure enforcement under
33 applicable regulations. Nothing in this determination shall be construed so as to relieve General
34 Chemical of its obligations under any state, local, or federal laws or regulations.
- 35 8. Access to the facility by the U.S. Environmental Protection Agency (EPA), state, or local
36 regulatory personnel shall be permitted upon request for the purpose of compliance assurance
37 inspections. Failure to allow access is grounds for enforcement under federal and state law.

1 Reviewed by:

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Richard B. Hibbard, P.E.
Engineering and Technical Services
Washington Department of Ecology

1/14/98

Date

10 Approved by:

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[Handwritten signature]

Joseph R. Williams
Program Manager, Air Quality Program
Washington Department of Ecology

1/14/98

Date



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 www.nwcleanair.org

Original Issuance: August 29, 1994
 Revision a: April 23, 1998
 Revision b: June 25, 2001
 Revision c: December 13, 2001
 Revision d: June 25, 2015

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 458d**

Project Summary: Expansion of the production capacity of Sulfuric Acid Plant Unit (SPU) 3 by 95 tons per day by debottlenecking existing systems.

Approved Emission Unit:

- Sulfuric Acid Plant Unit (SPU) 3 with double absorption system (referred to as Abatement Units 10 and 11)

Owner/Operator	Facility Name and Location
Chemtrade Solutions LLC 8579 North Texas Road Anacortes, WA 98221 Contact: Bill Black, Environmental Safety & Health Supervisor	Chemtrade Solutions LLC Anacortes Works 8579 North Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 458c (issued December 13, 2001), OAC 458b (issued June 25, 2001), OAC 458a (issued April 23, 1998), and OAC 458 (issued August 29, 1994).

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart H - Standards of Performance for Sulfuric Acid Plants

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions¹:

- (1) Sulfuric acid mist emissions from the acid plant common stack shall not exceed 1.5×10^{-6} pounds per dry standard cubic foot hourly average expressed as 100 percent H₂SO₄. In addition, sulfuric acid mist emissions from the stack shall not exceed 0.105 pounds per ton of sulfuric acid produced on an hourly average.
- (2) Visible emissions from the acid plant common stack shall not exceed an average of ten percent opacity in any consecutive six-minute period as determined by 40 CFR 60 Appendix A Method 9.
- (3) Compliance with the limits in Condition (1) shall be determined using the arithmetic average of three one-hour test runs conducted during annual performance testing. Performance tests shall be performed according to 40 CFR 60 Appendix A Method 8.



M.J. "Lyn" Tober, P.E.
Chemical Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Deleted throughput and production limits. Removed Condition 1 as unenforceable. Added annual performance testing for SO₂ and H₂SO₄. Added recordkeeping and adjusted reporting to match NSPS and PSD.

Revision b: Opacity condition adjusted to match PSD. Updated contact names. Deleted fee paragraph.

Revision c: Updated facility address. Added superseded permit term. Clarified language, updated language to match PSD, and deleted duplicate requirements.

Revision d: Deleted requirements that are duplicated in the PSD permit. Deleted completed tasks and duplicative requirements. Updated to current OAC format and language.

¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.



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Original Issuance: April 23, 1998
 Revision a: July 13, 2000
 Revision b: June 25, 2001
 Revision c: December 13, 2001
 Revision d: June 25, 2015

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 650d**

Project Summary: Installation and operation of a Sulfur Recovery Unit (SRU) with liquid oxygen combustion augmentation rated at 55 short tons per day.

Approved Emission Units:

- Sulfur Recovery Unit with Shell Claus Offgas Treating (SCOT) unit and Incinerator, equipped with Incinerator bypass to emergency flare
- Natural gas fired auxiliary boiler (4.2 MMBtu/hr)

Owner/Operator	Facility Name and Location
Chemtrade Solutions LLC 8579 North Texas Road Anacortes, WA 98221 Contact: Bill Black, Environmental Safety & Health Supervisor	Chemtrade Solutions LLC Anacortes Works 8579 North Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 650 (issued April 23, 1998), OAC 650a (issued July 13, 2000), OAC 650b (issued June 25, 2001), OAC 650c (issued December 13, 2001), and OAC 307a (issued May 14, 2007).

Note that in addition to other applicable rules and regulations, one or more of the approved emission units are subject to applicable portions of the following federal regulations:

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

- 40 CFR 63 Subpart A - General Provisions

- 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions¹:

- (1) Emissions of sulfur dioxide (SO₂) from the incinerator stack shall not exceed 250 ppm by volume (dry basis) at zero percent excess air, for any 12-hour period (measured as 12-hour rolling average).
- (2) Emissions of SO₂ from the SRU shall not exceed 9.2 pounds per hour SO₂ on a one-hour basis.
- (3) Emissions of sulfuric acid mist from the SRU shall not exceed 0.45 pounds acid per ton of sulfur produced on an hourly average.
- (4) The SRU sulfur recovery efficiency shall not be less than 99 percent. The sulfur recovery efficiency shall be calculated as follows:

$$\text{Efficiency} = \frac{(\text{S recovered}) * (100)}{(\text{S recovered}) + (\text{S incinerator})}$$

Where: Efficiency = sulfur recovery efficiency, percent
S recovered = (elemental S in pit) lb/hr
S incinerator = sulfur in incinerator stack, lb/hr

- (5) Compliance with Condition (1) shall be determined using a certified continuous emission monitoring system (CEMS) for SO₂ and O₂. The CEMS shall be installed, calibrated, maintained, and operated in accordance with 40 CFR 60.105, the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A.
- (6) Compliance with Conditions (1), (2), (3), and (4) shall be determined using the average of three 1-hour test runs conducted during annual performance tests performed within 12 months of the previous test. Performance tests shall be conducted according to EPA Methods 1, 2, 3A, 4, 6, and 8 and NWCAA Section 367 and NWCAA Appendix A. Testing shall be conducted while operating at a minimum production rate of 25 tons per day (100% H₂S basis).

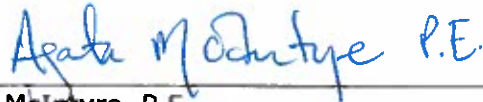
¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.

- (7) The sulfur dioxide (SO₂) emissions from the SRU shall not exceed 40 tons during any consecutive 12 month period.
- (8) Visible emissions from the incinerator stack shall not exceed an average of ten percent opacity in any consecutive 6-minute period as determined by 40 CFR 60 Appendix A Method 9.



M.J. "Lyn" Tober, P.E.
Chemical Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: The acid mist mass emission limit was revised upward to account for increased emissions at the higher permitted production rate. Condition 9 was restated to require a single series of annual performance tests at a minimum production rate of 50% of the current limit of 50 tons per day (25 tons per day) using either air or oxygen as a combustion gas.

Revision b: Modified Condition 6 to require EPA Method 9 rather than DOE Method 9A. NWCAA contact name changed. Fee paragraph deleted.

Revision c: Updated facility address. Removed references to NSPS Subpart GGG.

Revision d: Combined OAC 307a and OAC 650c. Deleted overlapping, duplicative, and completed requirements. Included applicability of NSPS Subpart GGG, MACT Subpart UUU, and MACT Subpart DDDDD. Converted to current OAC format.



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Original Issuance: July 22, 2004
 Revision a: February 4, 2009
 Revision b: July 8, 2010
 Revision c: June 25, 2015

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 880c**

Project Summary: Installation of a 9.2 MMBtu/hr natural gas-fired auxiliary heater on Sulfuric Acid Plant Unit (SPU) 3, for use in facilitating startup and maintaining conversion temperatures of the unit.

Approved Emission Unit:

- SPU3 natural gas fired auxiliary heater (9.2 MMBtu/hr) (also referred to as the Startup Heater)

Owner/Operator	Facility Name and Location
Chemtrade Solutions LLC 8579 North Texas Road Anacortes, WA 98221 Contact: Bill Black, Environmental Safety & Health Supervisor	Chemtrade Solutions LLC Anacortes Works 8579 North Texas Road Anacortes, WA 98221

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 880b (issued July 8, 2010).

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to applicable portions of the following federal regulations:

National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology Standards (MACT)

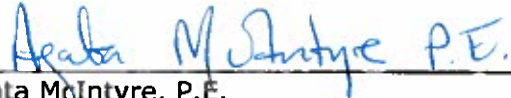
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Boilers and Process Heaters

As authorized by Northwest Clean Air Agency Regulation Section 300, this Order is issued subject to the following restrictions and conditions¹:

- (1) The auxiliary heater shall not operate for more than 1,000 hours in any 12-month period. Records documenting operation time shall be updated at least monthly and include the date of operation and total hours of operation on each calendar day the unit is run. Operation records shall be kept on-site and available for review by the NWCAA.
- (2) Visible emissions from the auxiliary heater stack shall not exceed an average of ten percent opacity in any consecutive six minute period as determined by 40 CFR 60 Appendix A Method 9.



M.J. "Lyn" Tober, P.E.
Chemical Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Adjusted heater rating from 7.7 MMBtu/hr to 9.2 MMBtu/hr to reflect actual installed unit. Revised Condition 2 to allow 5,000 hours during one 12-month period in 2009.

Revision b: Revised Condition 2 to allow 5,000 hours during one 12-month period in 2010. Revised Condition 3 to change opacity requirements to reflect EPA Method 9 instead of WDOE Method 9A.

Revision c: Removed 2010 additional hours allowance. Deleted explicit term to fire natural gas. Clarified language and modified to match current usage.

¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.

Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives this Order. Additional information regarding appeal procedures can be found at: www.eho.wa.gov under PCHB.