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Original Issuance: January 26, 1990

Revision a: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 265a**

Project Summary: Convert the Truck Loading Rack from top loading to bottom loading and install a vapor combustion device to control emissions during liquid product loading.

Approved Emission Units:

- Single island, bottom loading truck loading rack controlled by a John Zink Model GV-ZTOF-2400-1 vapor combustion device with supplemental firing on propane.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 265 issued January 26, 1990.

Note that in addition to other applicable rules and regulations, the approved emission unit is subject to the 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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

- (1) Emissions of volatile organic compounds from the vapor combustion device must not exceed 35 milligrams per liter of gasoline transferred. Compliance shall be demonstrated biennially using 40 CFR 60 Appendix A Method 25, or an alternative method approved in advance by the NWCAA.
- (2) Visible emissions from the vapor combustion device shall not exceed an average of ten percent (10%) opacity in any consecutive six-minute period as determined by 40 CFR 60 Appendix A Method 9.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Administrative revision for AOP cleanup.

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: <http://www.eluho.wa.gov/> under PCHB.



August 21, 1991

Revision a: October 2, 2002

Gary Goodman
ConocoPhillips Ferndale Refinery
P.O. Box 8
Ferndale, WA 98248

Order of Approval to Construct #314a

Dear Mr. Goodman:

On April 21, 1991 BP Oil Refinery in Ferndale, WA submitted a Notice of Construction and Application for Approval to construct three 90,000 barrel storage tanks and retrofit five existing tanks. These projects are part of an effort to comply with the National Emission Standards for Hazardous Air Pollutants for Benzene Waste Operations (40 CFR 61 Subpart FF). Subsequent to issuance of the original Order of Approval to Construct the Northwest Air Pollution Authority (NWAPA) reopened the approval order to remove obsolete and extraneous approval conditions. The changes made are listed at the end of this approval order.

The information submitted was reviewed to determine that all known available and reasonable air pollution control measures would be employed. The project was reviewed subject to NWAPA Regulation Section 302, Washington Administrative Code 173-403-105, and 40 CFR 61 Subpart FF. A Determination of Non-significance was issued by the NWAPA on April 18, 1991. You are hereby granted approval to construct tanks 900x1, 900x2, and 900x3 and modify tanks 300x40, 100x92, 100x95, and 100x98 subject to the following conditions.

1. Tanks 100x92 and 100x95 shall be retrofitted with rim mounted continuous secondary seals on existing external floating roofs conforming to the design requirements of 40 CFR 60 Subpart Kb (60.112b (a)(2)).
2. Tanks 300x40 and 100x98 shall be retrofitted with the design requirements of internal floating roofs conforming 40 CFR 60 Subpart Kb (60.112b (a)(1)).
3. Tanks 300x40, 100x98, 100x92 and 100x95 shall be subject to testing and procedures requirements 40 CFR 60 subpart Kb (60.113b) reporting and recordkeeping requirements (60.115b) and monitoring (60.116b).

It is noted that tanks 900x1, 900x2, and 900x3 are subject to 40 CFR 61 Subpart FF (Benzene Waste Standards) and 40 CFR 60 Subpart Kb (Volatile Organic Liquid Storage Vessels). Compliance with these federal rules establishes emission control that

Gary Goodman /F
ConocoPhillips Ferndale Refinery
10/02/02
Page 2 of 2

is equivalent to the best available control technology requirements of state and local new source review regulations.

Sincerely,

James Randles
Director

Reviewed by: Annie Naismith P.E. *A.N.*

Revision a: October 2, 2002

- 1) Removed approval conditions for tanks 900x1, 900x2, and 900x3 and, for these tanks, added text indicating equivalency between the deleted approval condition and compliance with 40 CFR 61 Subpart FF.
- 2) Deleted references to tank 13x100 which is out of service and was not retrofitted as planned.
- 3) Deleted out of date text pertaining to procedures and fees.



August 2, 1995

Gary Solari
Superintendent, Environmental
Tosco Northwest Company
Ferndale, Refinery
P.O. Box 8
Ferndale, WA 98248

Order of Approval to Construct #559

Dear Mr. Solari:

On July 13, 1995, Tosco Northwest Company submitted a "Notice of Construction and Application for Approval" to install vapor controls on select benzene-containing waste management units at the Ferndale Refinery. The modifications are being made in preparation for possible future emission control requirements imposed by the Benzene Waste Operations NESHAP (40 CFR 61 part FF). The refinery is not presently subject to the control requirements of this NESHAP as total annual benzene waste throughput is below 10 Mg/yr.

The information was reviewed to determine that all known, available, and reasonable air pollution control measures would be employed. The project was reviewed subject to the Northwest Air Pollution Authority (NWAPA) regulation Section 302 and Washington Administrative Code (WAC) 173-400-114, and WAC 173-460. A Determination of Non-Significance was issued by the Northwest Air Pollution Authority on July 18, 1995.

You are hereby authorized to make the specified modifications to the waste management units subject to the following conditions:

1. The project shall be constructed and operated in accordance with the information submitted with your application dated July 13, 1995.
2. Emission abatement modifications installed at individual drain system vent points (manholes, diversion boxes, storage tank water draw boxes, & pump stations) specified in the Notice of Construction and Application for Approval shall be designed, operated, and maintained in accordance with 40 CFR 61.346.

3. Emission abatement modifications installed at the waste water treatment plant API separator shall be designed, operated, and maintained in accordance with 40 CFR 61.347 for the fixed roof and 40 CFR 61.352 for the floating roof.
4. Closed vent systems and control devices utilized at emission points specified in the Notice of Construction and Application for Approval shall be designed, operated, and maintained in accordance with 40 CFR 61.349.
5. Upon becoming subject to the Benzene Waste Operation NESHAP, notify the NWAPA in writing of the applicability date. At that time the modifications shall be operated in accordance with all provisions of 40 CFR 61 subpart FF National Emission Standard for Benzene Waste Operations.

Final approval to operate shall be conditioned upon the facility meeting the requirements described above and conditions set forth in the application and the applicable air pollution control regulations, when in actual operation.

You are requested to notify the NWAPA in writing when the installation is complete and provide the expected date that you propose to begin using the facility. An on-site inspection may be required before start up and again after the units have been in service for a period of time. A "Certificate of Approval to Operate" will be issued after we determine that the unit was installed in accordance with the application and can operate in compliance with the regulations of the Authority and the conditions of approval.

To incorporate these approval conditions into your air operating permit application upon completion of the project, I ask that you provide compliance certification pursuant to WAC 173-401-520 that references the approval conditions and construction application.

Please contact Lester Keel at 428-1617 x209 if you have any questions about the approval of this project. A statement is enclosed for the Plan Examination Fee and SEPA Review Fee in the amount of \$300.00.

Sincerely,



Terry L. Nyman
Air Pollution Control Officer

Reviewed by Anne Naismith, P.E. *A-N*

TLN(lk):lk



August 30, 1996

Revision a: October 2, 2002

Gary Goodman
ConocoPhillips Ferndale Refinery
P.O. Box 8
Ferndale, WA 98248

ORDER OF APPROVAL TO CONSTRUCT NO. 564a

Dear Mr. Goodman:

Tosco Refining Company submitted a "Notice of Construction and Application for Approval" on August 9, 1996 to construct a Butane Isomerization Unit for conversion of normal butane to the more valuable isobutane isomer at the alkylation unit area of the Tosco Refining Company Ferndale Refinery. The project, scheduled for completion in the first quarter of 1997, will include one reactor, heat exchangers, an organic chloride injection system, a perchloroethylene storage tank, pumps, feed dryers, process sewer connections, a caustic scrubber and associated valves and flanges. This project increases fugitive air pollutant emissions of butane, a volatile organic compound and toxic air pollutant. The project also causes emission of a new toxic air pollutant, perchloroethylene, from the alkylation unit area.

Subsequent to issuance of the original Order of Approval to Construct the NWAPA reopened the approval order to remove obsolete and extraneous approval conditions. The changes made are listed at the end of this approval order.

The information was reviewed to determine that all known, available, and reasonable air pollution control measures would be employed. The project was reviewed subject to NWAPA regulation Sections 302, 560, and 580, WAC 173-400-100, WAC 173-400-110, WAC 173-460, and Title 40 CFR 60 Subparts GGG, and QQQ. A Determination of Non-significance was issued by the Northwest Air Pollution Authority on September 25, 1995.

Equipment in Volatile Organic Compound service such as pumps, valves, and flanges installed as part of this project will be subject to Title 40 CFR 60 Subpart GGG. Equipment in VOC service at the Butamer is also subject to NWAPA Regulation section 580.8. Any new sewers that will receive VOC from the Butamer will be subject to Title 40 CFR 60 Subpart QQQ. These federal rules provide a level of control that is equivalent to the best available control technology requirements of state and local air pollution regulations. In light of these overlapping requirements this approval order is being issued with conditions for equipment and sewers that are in VOC service. The exception to this is equipment in perchloroethylene service, which is not subject to Subpart GGG. Approval conditions are established for equipment in perchloroethylene service.

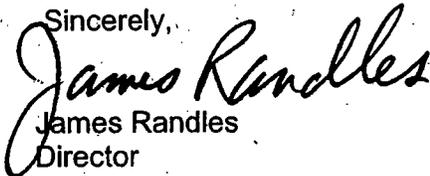
Gary Goodman
ConocoPhillips Ferndale Refinery
10/02/02
NOC # 564a
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You are hereby authorized to construct and operate the aforementioned equipment subject to the following condition:

- 1 Equipment in perchloroethylene service shall be subject to the equipment leak standards, monitoring, recordkeeping and reporting requirements in 40 CFR Part 63 Subpart CC National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. Note: the Butane Isomerization Unit is not a tacitly affected process unit with respect to Subpart CC because the equipment is not in "organic hazardous air pollutant service" as defined by this subpart.

Please call Lester Keel if you have any questions about the approval of this project.

Sincerely,


James Randles
Director

Reviewed by: Annie Naismith, P.E. *A. N.*

Revision a: October 2, 2002

- 1) Added text indicating equivalency between applicable federal standards and the conditions of the approval order. Deleted the overlapping conditions from the approval order.
- 2) Deleted out of date text pertaining to fees and procedures.



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Original Issuance: April 9, 1996

Revision a: August 13, 2008

Revision b: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 578b**

Project Summary: Construct and operate a new, gas fired boiler. The new #1 Boiler replaces the old #1 Boiler that was decommissioned in 1995.

Approved Emission Units:

- #1 Boiler (22F-1C) with a rated heat input capacity of 162 MMBtu/hour HHV.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 578a issued August 13, 2008.

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 Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

National Emission Standards for Hazardous Air Pollutants (NESHAP)

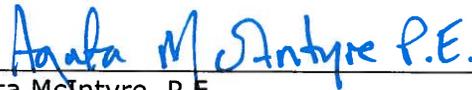
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

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

- (1) Nitrogen oxide emissions from the #1 Boiler stack shall not exceed 0.040 lb/MMBtu (HHV) on a consecutive 365-day rolling average.
- (2) The boiler shall combust only natural gas or refinery fuel gas.
- (3) Visible emissions from the #1 Boiler stack shall not exceed an average of five percent (5%) opacity in any consecutive six-minute period as determined by 40 CFR 60 Appendix A Method 9.
- (4) Continuous compliance shall be monitored by a Continuous Emission Monitor System (CEMS) for NO_x and O₂. The CEMS shall be calibrated, maintained and operated in accordance with NWCAA Regulation Section 367; NWCAA Regulation Appendix A and 40 CFR 60 Appendices B and F.
- (5) Submit the following information to the NWCAA within 30 days of completing the reported calendar month.
 - (A) Maximum monthly NO_x emission rate in lb/MMBtu (HHV), 365-day rolling average.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Revise NO_x limit to 0.040 lb/MMBtu, 365-day rolling average, pursuant to the Consent Decree. The remove #2 distillate as a backup fuel.

Revision b: Administrative revision for AOP cleanup.

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: <http://www.eluho.wa.gov/> under PCHB.



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Original Issuance: May 31, 2000

Revision a: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 727a**

Project Summary: Construct and operate a new Merox Extraction Unit (Merox Unit) to remove mercaptans from olefin feed streams to the Alkylation Unit. The Merox Unit is designed with two treating trains to remove sulfur from a 9,000 barrels per day (BPD) LPG stream and a 5,700 BPD light gasoline stream.

Approved Emission Units:

- Equipment leaks at the Merox Unit

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 727 issued May 31, 2000.

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 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)

- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

- (1) All equipment in the Merox Unit subject to 40 CFR 60 Subpart GGG or 40 CFR 63 Subpart CC must comply with applicable requirements of 40 CFR 60 Subpart VV with the following revisions.
 - (A) The leak definition for pumps in light liquid service is 2,000 ppm. [Revision to §60.482-2(b)(1)].
 - (B) The leak definition for valves in gas/vapor service and in light liquid service is 1,000 ppm. [Revision to §60.482-7(b)].
 - (C) Calibration gas shall be a mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring. [Substitute language in §60.485(b)(1)(ii) with §60.485a(b)(1)(ii)].
 - (D) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(8). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition

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: <http://www.eluho.wa.gov/> under PCHB.

multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored. [Add language from §60.485a(b)(2)].



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Administrative revision for AOP cleanup including realigning LDAR requirements to enhanced 40 CFR 60 Subpart VV.



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Original Issuance: April 6, 2001

Revision a: August 13, 2002

Revision b: June 8, 2005

Revision c: July 29, 2005

Revision d: August 2, 2012

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) #733d**

Project Summary: The Phillips 66 Company (previously known as the ConocoPhillips Company) will install a new fluidized catalytic cracking unit (FCCU) with a nominal capacity of 35,000 barrels of feed per day, a carbon monoxide boiler, and a catalytic gasoline desulfurization (CGD) unit and will modify certain existing process units at the Ferndale Refinery. These changes implement the Ferndale Upgrade Project, which will increase gasoline production efficiency and improve reliability, and the Clean Fuels Project, which will upgrade sulfur removal capabilities to meet gasoline sulfur-content limitations.

Approved Emission Units:

- Fluidized Catalytic Cracking Unit (FCCU)
- Alkylolation Unit Feed Treater
- One Catalytic Gasoline Desulfurizer (CGD)
- No 2 Hydrofiner Unit Modification
- Sulfur Recovery Unit 19

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Phillips 66 Company Ferndale Refinery
 PO Box 8
 Ferndale, WA 98248
 NOC Contact:
 Mr. Jody M. Moffett
 HSE Manager

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Phillips 66 Company
 3010 Briarpark Drive
 Houston, TX 77042

FACILITY LOCATION:

Phillips 66 Company – Ferndale Refinery - 3901 Unick Road, Ferndale, Washington

Permit History

- This project is subject to Permit PSD-00-02 issued by the Washington Department of Ecology under Title 1 Part C of the Federal Clean Air Act (Prevention of Significant Deterioration (PSD) for particulate matter (PM) and PM₁₀, oxides of nitrogen (NO_x) and carbon monoxide (CO).
- As of the date of issuance, this Order supersedes NWCAA OAC#733c dated July 29, 2005.

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 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
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

40 CFR Part 64 Compliance Assurance Monitoring (40 CFR Part 64)

National Emission Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology Standards

- 40 CFR Part 63 Subpart A – General Provisions
- 40 CFR Part 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 Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

1. All equipment associated with the FCCU, Alkylation, Cat Gasoline Desulfurizer and #2 Hydrofiner Units and subject to 40 CFR Part 63 Subpart CC or 40 CFR Part 60 Subpart GGG shall be in compliance with 40 CFR Part 63 Subpart H except as provided in paragraphs (c) through (i) of §63.648. Compliance shall be attained upon initial startup of each unit.
2. With respect to the equipment referenced in Condition 1, the owner or operator shall comply with the following:
 - a. Recordkeeping and reporting provisions of 40 CFR 63.654(d), 40 CFR 63.181 and 40 CFR 63.182 except for §§ 63.182(b), (c)(2) and (c)(4);
 - b. The applicable requirements of 40 CFR Part 63 Subparts A & CC; and,
 - c. The applicable requirements of 40 CFR Part 60 Subparts A & GGG. Compliance with Condition 1 is an adequate demonstration of compliance with the leak detection and repair standard of §60.592. Compliance with Condition 2(a) is an adequate demonstration of compliance with the recordkeeping and reporting requirements of §§ 60.486 and 60.487.
 - d. A single or multiple point calibration drift assessment shall be conducted after each monitoring shift, and prior to all calibrations performed after the initial daily calibration, on all organic vapor analyzers (OVA) used to perform required EPA

Method 21 monitoring. The calibration drift test shall follow the procedures of EPA Method 21 (40 CFR Part 60 Appendix A) §3.2 and §4.4.2 and 40 CFR §60.485(b)(1). If any calibration drift assessment after the initial calibration shows a negative drift of more than 10%, then all components monitored since the last calibration shall be remonitored.

- e. Concentrations measured during performance of required OVA calibrations and EPA Method 21 monitoring shall be recorded. The date of each measurement and a unique identifier linking the item measured to each concentration datum shall be part of the record.
3. For the purposes of implementation of Conditions 1 and 2 of this Order, the term "in organic hazardous air pollutant service" shall be replaced with "in VOC service" as that term is defined in 40 CFR Part 60 Subpart VV.
4. Sulfur dioxide emissions from Sulfur Recovery Unit 19 (SRU 19) shall not exceed 250 ppm by volume, dry basis, corrected to zero percent excess air, based on a 12-hour rolling total. Sulfur dioxide emissions from the sulfur recovery unit shall not exceed 150 ppm by volume, dry basis, corrected to zero percent excess air, averaged over each rolling 720-hour period of operation.
 - a. Sulfur dioxide and oxygen concentration in the discharge from the SRU 19 shall be monitored in compliance with 40 CFR Part 60 subpart J, subpart A and Appendix F. Concentration measurements provided by the continuous emissions monitoring system (CEMS) shall be used to directly determine compliance with Condition 4 and 40 CFR §60.104(a)(2)(i) on a continuous basis. The CEMS shall comply with the appropriate quality assurance requirements of 40 CFR part 60 appendix F.
 - b. The owner or operator shall conduct testing, recordkeeping, and reporting in accordance with the relevant sections of 40 CFR Part 60 Subpart J. The emission limits specified in Condition 4 shall be included in the basis for recordkeeping and reporting.
 - c. Emissions from the sulfur pit will either be eliminated, controlled, and/or included and monitored as part of the SRU 19 emissions under 40 CFR 60.104(a)(2).
5. Visible emissions from the SRU 19 tail gas incinerator stack shall not exceed 10 percent opacity for more than three minutes in any one-hour period as measured by Ecology Method 9A.
6. Supplemental fuel combusted in the SRU 19 incinerator (19F-21) shall be limited to purchased natural gas.
7. The owner or operator shall prepare, maintain on-site, and make available to NWCAA personnel upon request an operation and maintenance manual that identifies good air pollution control practices for minimizing emissions pursuant to 40 CFR §60.11(d) for SRU 19 including air pollution compliance monitoring and plantwide sulfur dioxide emissions abatement during upset conditions.
8. Fuel combusted in the CGD Feed Heater, rated at 40 MMBtu/hr, shall be limited to refinery fuel gas containing less than 50 ppm hydrogen sulfide (rolling 24-hour average) or purchased natural gas.

- a. The hydrogen sulfide content of refinery fuel gas combusted in the CGD Heater shall be continuously monitored in compliance with 40 CFR Part 60 Subpart J, Subpart A and Appendix F during periods of heater operation. Concentration measurements provided by the CEMS required by 40 CFR Part 60 Subpart J shall be used to directly determine compliance with Condition 8 and Subpart J on a continuous basis.
 - b. The owner or operator shall conduct testing, recordkeeping, and reporting in accordance with the relevant sections of 40 CFR Part 60 Subpart J. The emission limits specified in Condition 8 shall be included in the basis for recordkeeping and reporting.
 - c. Written operating procedures to assure compliance with Condition 8 shall be provided to the NWCAA on request and shall be available to the heater operators at all times.
9. Discharge from the FCCU Combustion Air Heater, FCCU Regenerator, and the CO Boiler shall be continuously routed through a wet gas scrubber that reduces sulfur dioxide emissions to the atmosphere by at least 90% averaged over each rolling twenty-four hours of FCCU operation and at least 95% over each rolling seven days of FCCU operation. The owner or operator shall conduct monitoring, testing, recordkeeping and reporting in compliance with the appropriate sections of 40 CFR §60.105, §60.106 & §60.107. The emission limits specified in this condition shall be included in the basis for recordkeeping and reporting.
10. Sulfur dioxide discharged from the FCCU Combustion Air Heater, FCCU Regenerator, and the CO Boiler in combination shall not exceed 548.4 tons per rolling 12-month period. Each calendar month the owner or operator shall use procedures approved by the NWCAA and data from the SO₂ continuous monitoring system (CMS) to calculate the mass of sulfur dioxide emitted over the preceding 12-month period. The results of this calculation shall be reported to the NWCAA each month. All data and supporting documentation used to make each calculation shall be kept on-site for at least five years.
11. Sulfur dioxide discharged from the FCCU Combustion Air Heater, FCCU Regenerator, and the CO Boiler in combination shall not exceed 25 ppm_{dv} on a 365-day rolling average basis and 50 ppm_{dv} on a 7-day rolling average basis, at 0 percent oxygen. Compliance with these emission limits shall be demonstrated through the use of a CEMS. The CEMS shall be calibrated, maintained, and operated in accordance with NWCAA Appendix A: Ambient Monitoring, Emissions Testing, and Continuous Emission and Opacity Monitoring and 40 CFR Part 60 appendices B and F.
- a. SO₂ emissions during periods of malfunction of the FCCU (defined as the fluidized catalytic cracking unit and its regenerator and associated boiler) and during periods of malfunction of the wet gas scrubber will not be used in determining compliance with the 50 ppm_{dv} emission limit, provided that during such periods the owner or operator implements good air pollution control practices to minimize SO₂ emissions. "Malfunction" shall mean, as specified in 40 CFR Part 60.2, "any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual

manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.”

- b. Each calendar month the owner or operator shall use data from the SO₂ CEMS to calculate each of the 365-day and 7-day rolling average SO₂ concentrations for each day in the month. The results of this calculation shall be reported to the NWCAA each month. All data and supporting documentation used to make each calculation shall be kept on-site for at least five years.
12. Visible emissions discharged from the FCCU Combustion Air Heater, FCCU Regenerator, and the CO Boiler shall not exceed 20% opacity for more than six minutes in any hour as measured by EPA Method 9. The owner or operator shall monitor compliance pursuant to the facility's EPA-approved alternative monitoring plan dated April 4, 2003.
13. Within 90 days of initial start-up of the CO boiler, the owner or operator shall identify boiler operational parameters and practices that have been described as "good combustion practice." These operational parameters and practices shall be included in an operation and maintenance (O&M) manual for the boiler. The O&M manual shall also include a description of records that will be maintained to insure the continuous application of "good combustion practice." The O&M manual shall be available at the facility for review by state, federal, and local agencies.
14. The FCCU Combustion Air Heater shall not be operated more than 240 hours in any 12-month period. The owner or operator shall notify the NWCAA within 12 hours after each heater startup. This requirement becomes applicable 30 days after the initial startup date.
15. The annual capacity factor for natural gas burned in the CO boiler shall not exceed ten percent of the total potential heat input to the CO boiler in each calendar year. Total potential heat input shall not include heat recovered from the FCCU regenerator, but shall include heat generated from the combustion of CO in the boiler. The owner or operator shall continuously monitor the amount of purchased natural gas combusted in the CO boiler in accordance with a monitoring plan approved by the NWCAA.
16. The quantity of gasoline loaded onto marine vessels at the refinery marine terminal shall be less than 10,000,000 barrels per rolling 12-month period. The quantity of VOC emitted from the marine terminal shall not exceed 819 tons per rolling 12-month period. The owner or operator shall record the quantity and identity of each product transferred into marine vessels, and keep the records available to the NWCAA for at least five years. The owner or operator shall provide to the NWCAA semiannual or more frequent reports indicating the monthly rolling 12-month quantity of gasoline transferred onto marine vessels and VOC emissions from the marine terminal.
17. Combined total emissions from the FCCU and CGD units and emissions increases resulting from modifications to the SRU 19 and Alkylation units shall not cause exceedance of acceptable source impact levels specified in WAC 173-460-150 and -160 as determined by methods specified in WAC 173-460-080.
18. The heaters and boilers listed in Table 1 are affected facilities, as that term is used in the NSPS, 40 CFR Part 60, and are subject to and will comply with the requirements of

NSPS Subparts A and J for fuel gas combustion devices. Fuel combusted in the following units shall be limited to refinery fuel gas containing less than 162 ppm hydrogen sulfide (3-hour average) or purchased natural gas:

Table 1. Facility Heaters and Boilers

Crude Heater 1F-1	Supplemental Crude Heater 1F-1A
Tar Separator Heater 4F-2	Alky Depropanizer Reboiler 17F-1
No. 2 HDF Heaters 14F-1 & 2	No. 3 Reformer Pretreat Heater 18F-1
No. 3 Reformer Heaters 18-F21, 22, 23 & 24	No. 3 Reformer Regen. Heater 18F-26
DHT Heater 33F-1	No. 3 Boiler 22F-1B
No. 1 Boiler 22F-1C	No. 4 Boiler 22F-1E
No. 2 Boiler 22F-1A	

The hydrogen sulfide content of refinery fuel gas combusted in the devices specified in this condition shall be monitored by a CMS that is compliant with 40 CFR Part 60 subpart J, subpart A and appendix F. Concentration measurements provided by the CMS shall be used to directly determine compliance on a continuous basis.

19. Fuel oil (defined as any liquid fossil fuel with a sulfur content greater than 0.05% by weight) shall not be burned in any of the combustion devices subject to this permit except during periods of natural gas curtailment, test runs, or operator training. This does not limit the owner or operator's ability to burn Torch Oil in an FCCU regenerator to assist in starting, restarting, maintaining hot standby, or maintaining regenerator heat balance.
20. The owner or operator shall keep all raw data, calculation results, test results, and monitoring data required by this order on-site and available to NWCAA representatives for not less than five years.
21. For each test required by this order, the owner or operator shall submit a test plan to the NWCAA not less than 30 days before the scheduled test date and notify the NWCAA at least two weeks in advance of the exact test date. Test results shall be provided to the NWCAA not more than 45 days after completion of the sampling. All performance tests shall be conducted at or near maximum representative operating capacity for the process. All tests shall be conducted while operating the control device at conditions that represent normal operation.
22. The owner or operator shall provide to the NWCAA the following information in a monthly report. The report shall be submitted within 20 days after the end of each month.
 - a. For all monitoring systems required to be operated by this order, including control device performance monitoring systems: the dates, times, and causes of all periods that the monitoring system(s) did not function or operating parameters were outside of established ranges in the reporting month.
 - b. The beginning and ending times and dates of all periods that the FCCU Combustion Air Heater was operated in the reporting month.

- c. The total number of hours the FCCU regenerator was operated in partial combustion mode in the reporting month. The total number of hours the FCCU regenerator was operated in full combustion mode in the reporting month.
- d. A summary providing the range and average of the rolling 12-hour average and 720-hour average SRU 19 mass and concentration emission calculations made in each reporting month.
- e. The quantity of natural gas combusted and the beginning and ending times and dates for all periods during which natural gas is combusted in the CO boiler in each reporting month.
- f. At the FCCU wet gas scrubber: the maximum and average operating parameter readings recorded in each reporting month from monitoring as per Condition 12. This condition was designated as Condition E-10(f) of OAC #733a.

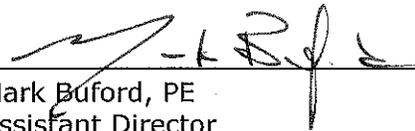
The following condition is included for Consent Decree purposes:

23. Compliance with the requirements of condition 23 does not relieve the Phillips 66 Company from the responsibility to maintain continuous compliance with all applicable NWCAA, State, and Federal requirements or from the resulting liabilities for failure to comply.

The facility shall investigate the cause of Tail gas flaring incidents, take steps to correct the conditions that have caused or contributed to Tail gas flaring incidents, and minimize such incidents. For purposes of this specific condition, Tail gas shall mean exhaust gas from the Claus trains and the tail gas unit ("TGU") section of the sulfur recovery plant. A Tail gas flaring incident shall mean the combustions of Tail gas that either is: a) combusted in a flare and results in 500 pounds or more of SO₂ emissions in any twenty-four hour period or 2) combusted in a thermal incinerator and results in excess emissions of 500 pounds or more SO₂ emissions in any twenty-four (24) hour period. Only those time periods which are in excess of a SO₂ concentration of 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO₂ emissions from the incinerator. The facility shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all contributing causes of the Tail gas flaring incident(s). For purposes of this specific condition, Root Cause shall mean the primary cause(s) of a Tail gas flaring incident(s) as determined through a process of investigation. Records of such investigations and corrective actions shall be kept onsite.



Annie Naismith, PE
Senior Engineer



Mark Buford, PE
Assistant Director

Revision a:

1. Changed clean fuels desulfurization technology references from a heavy catalytic

- gasoline desulfurization unit employing two heaters (40 and 35 MMBtu/hr capacity) to the Phillips S-Zorb CGD unit with one 40 MMBtu/hr-capacity heater.
2. EPA Method 202 measurement of condensable fine particulate matter emitted from the FCCU was added to the required testing regimen in section D-4(a) of the permit.
 3. Text was added to indicate revisions to PSD Permit #PSD00-02.
 4. References to Tosco Refining Company were changed to Phillips Company to reflect change in ownership of the facility.
 5. Several NWCAA permit conditions that directly overlapped with PSD permit conditions were removed. Text was added to indicate that BACT emission limitations for emissions of NO_x are specified in PSD permit #PSD-00-02.
 6. Removed the designation "pipeline-grade" from references to natural gas. Removed the word "and" from the rule applicability table in the preface to the permit to indicate that applicability of 40 CFR part 63 subpart CC and 40 CFR part 60 subpart GGG does not overlap (pursuant to 40 CFR §63.640p). Removed "proposed" from references to 40 CFR part 63 subpart UUU in the rule applicability table because subpart UUU was finalized. Removed words "compliance determination" and replaced with "testing and monitoring".
 7. Added limits on VOC emissions and gasoline loading at the refinery marine terminal.

Revision b:

1. Reformatted permit to new NWCAA formatting standards.
2. Revised SRU Condition B1 to specify 12-hour rolling total averaging period for emission limit in new Condition 4.
3. Removed SRU carbon monoxide (CO) emission limits in Condition B3.
4. Removed CGD Feed Heater CO emission limits in Condition C2.
5. Removed requirement to monitor wet gas scrubber performance for SO₂ removal through minimum and maximum operating parameter values. The wet gas scrubber system has both an inlet and an outlet CEM.
6. Revised visible emissions monitoring Condition D3 from the FCCU Combustion Air Heater, FCCU Regenerator, and the CO Boiler system to tie the monitoring method to the facility's current Alternative Monitoring Plan, rather than monitoring for PM/PM₁₀.
7. Removed FCCU Regenerator PM/PM₁₀ emission limits and monitoring requirements in Condition D4.
8. Removed FCCU/CO Boiler CO emission limits and monitoring requirements in Condition D5.
9. Revised Condition 10(f) to require reporting of operating parameter readings as per the condition that requires the readings.
10. References to Phillips Company were changed to ConocoPhillips Company to reflect change in ownership of the facility.

Revision c:

1. Removed BACT analysis for NO_x, PM/PM₁₀, and CO.
2. Added a statement that OAC #733b is superseded.
3. Added a sulfur pit condition to incorporate Consent Decree (CD) requirement.
4. Added an FCCU unit SO₂ limit of 25 and 50 ppm_{dv}, with monitoring, recordkeeping, and reporting to incorporate CD requirements.
5. Deleted a requirement to assess compliance with toxic air pollutant requirements by initial testing. The requirements have been completed.

6. Added an applicability condition for NSPS Subparts A and J for the facility's heaters and boilers, and expanded the table of heaters and boilers to include Boiler #4 22F-1E and the DHT Heater 33F-1. This was to incorporate CD requirements.
7. Added a fuel oil combustion prohibition to incorporate CD requirements.
8. Renumbered and corrected typos.

Revision d:

1. The permit was reformatted to the current format and the company name was changed.
2. For clarification purposes, since the refinery now has two sulfur recovery units the SRU unit referenced in this permit was identified as No. 19.
3. Quality Control and Assurance requirements for the CEM were added to Condition 11.
4. Condition 23 was added for Consent Decree purposes to provide federally-enforceable requirements in the case of a SRU Tail gas incident resulting in 500 pounds or more of SO₂ in a 24-hour period above 250 ppm.

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. Fed. Reg. 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.



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Original Issuance: July 26, 2001

Revision a: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 780a**

Project Summary: Modify Diesel Hydrotreater (DHT) Heater to combust refinery fuel gas.

Approved Emission Units:

- One (1) gas-fired DHT Heater (33F-1) with a heat input capacity of 48 MMBtu per hour, higher heating value (HHV).

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 780 issued July 26, 2001.

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
- **National Emission Standards for Hazardous Air Pollutants (NESHAP)**
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional 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) Fuel combusted in the DHT Heater is limited to refinery fuel gas and purchased natural gas.
- (2) The hydrogen sulfide (H₂S) concentration of refinery fuel gas combusted in DHT Heater shall not exceed 50 ppm by volume, based on a consecutive 24-hour rolling average.
Compliance with this condition shall be determined by operating a continuous emission monitoring system (CEMS) for hydrogen sulfide. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate requirements of 40 CFR 60 Subpart J, Appendix B and Appendix F, and NWCAA Section 367 and Appendix A, including all relevant recordkeeping and reporting requirements.
- (3) Emissions of nitrogen oxides (NO_x) from the DHT Heater shall not exceed 0.05 lb per MMBtu heat input (HHV), based on a consecutive 3-hour rolling average.
Compliance with this condition shall be determined by conducting a source test within 180 days of the heater firing at a rate exceeding 42 MMBtu (HHV)/hour, based on a consecutive 3-hour rolling average. The test shall be conducted in accordance with 40 CFR 60 Appendix A, Method 19 and Method 7, 7A, 7E, or other test method approved in advance in writing by the NWCAA. Source testing shall be conducted at the maximum achievable firing rate of the heater during testing.
- (4) The firing rate of the DHT Heater shall not exceed 48 MMBtu/hour (HHV), based on a consecutive 3-hour rolling average. Compliance with this condition shall be documented by maintaining a record of the firing rate of the heater.
- (5) Visible emissions from the DHT Heater stack shall not exceed an average of five percent opacity in any consecutive six minute period as determined by 40 CFR 60 Appendix A Method 9.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Administrative revision for AOP cleanup.

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: February 4, 2002

Revision a: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 795a**

Project Summary: Construct and operate a new debutanizer distillation tower in the existing Alkylation Unit. The new tower will remove butane from alkylate to improve the production of low vapor pressure alkylate.

Approved Emission Units:

- Equipment leaks from new components installed at the Alkylation Unit.
- New or modified oily wastewater drains associated with this project.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 795 issued February 04, 2002.

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 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
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 60 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions

- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

- (1) All equipment in the Alkylation Unit subject to 40 CFR 60 Subpart GGG or 40 CFR 63 Subpart CC must comply with applicable requirements of 40 CFR 60 Subpart VV with the following revisions.
 - (A) The leak definition for pumps in light liquid service is 2,000 ppm. [Revision to §60.482-2(b)(1)].
 - (B) The leak definition for valves in gas/vapor service and in light liquid service is 1,000 ppm. [Revision to §60.482-7(b)].
 - (C) Calibration gas shall be a mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring. [Substitute language in §60.485(b)(1)(ii) with §60.485a(b)(1)(ii)].
 - (D) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(8). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of

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: <http://www.eluho.wa.gov/> under PCHB.

more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored. [Add language from §60.485a(b)(2)].



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Administrative revision for AOP cleanup including realigning LDAR requirements to enhanced 40 CFR 60 Subpart VV.



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Original Issuance: October 27, 2004

Revision a: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 864a**

Project Summary: Install a dry chloride scrubber on the #3 Reformer Unit catalyst regeneration vents to comply with 40 CFR 63 Subpart UUU. The scrubber reduces hydrogen chloride emissions prior routing through the CO Boiler at the Fluidized Catalytic Cracking Unit.

Approved Emission Unit:

- Dry chloride scrubber with emissions routed through the CO Boiler.

Note, the dry chloride scrubber is a control device and not an emission unit.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 864 issued October 27, 2004.

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:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

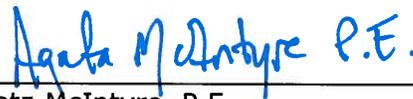
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

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

- None -



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Remove all conditions because the project was not reviewable under NWCAA Regulation Section 300.

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: August 12, 2004

Revision a: September 15, 2008

Revision b: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 877b**

Project Summary: Construct and operate a new gas fired utility boiler referred to the #4 Boiler (22F-1E) with a heat input capacity of 164 MMBtu per hour (HHV). The boiler replaces a temporary boiler with a heat input capacity of 88 MMBtu per hour approved under OAC 849.

Approved Emission Unit:

- One (1) gas fired #4 Boiler (22F-1E) with a heat input capacity of 164 MMBtu/hour. The boiler is equipped with ultra-low NOx burners.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 877a issued September 15, 2008.

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 Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart DDDDD - Standards of Performance for Industrial, Commercial, and Institutional 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 #4 Boiler shall combust only natural gas or refinery fuel gas.
- (2) Visible emissions from the #4 Boiler stack shall not exceed an average of five percent (5%) opacity in any consecutive six-minute period as determined by 40 CFR 60 Appendix A, Method 9.
- (3) Nitrogen oxides (NO_x) from the #4 Boiler stack shall not exceed any of the following emission limits;
 - (A) 15 ppmvd corrected to 3% oxygen, based on a consecutive 24-hour rolling average.
 - (B) 0.018 lb/MMBtu, based on a consecutive 24-hour rolling average.Compliance with this condition shall be monitored by a Continuous Emission Monitoring System (CEMS) for NO_x and O₂. The CEMS shall be calibrated, maintained and operated in accordance with NWCAA Appendix A and 40 CFR 60 Appendices B and F.
- (4) Fuel combusted in the #4 Boiler shall not contain hydrogen sulfide (H₂S) in excess of 50 ppm based on a consecutive 24-hour rolling average, and 162 ppm based on a consecutive 3-hour rolling average. During periods when the #4 Boiler combusts refinery fuel gas, the H₂S content of the gas shall be continuously monitored in accordance with 40 CFR 60 Subpart J, Subpart A and Appendix F.
- (5) Carbon monoxide (CO) from the #4 Boiler stack shall not exceed;
 - (A) 70 ppmvd corrected to 7% oxygen, based on a consecutive 24-hour rolling average.
or, when Condition (5)(A) is exceeded,
 - (B) 18.1 pounds per hour, based on a consecutive 24-hour rolling averageCompliance with this condition shall be monitored by a Continuous Emission Monitor System (CEMS) for CO and O₂. The CEMS shall be calibrated, maintained and operated in accordance with NWCAA Appendix A and 40 CFR 60 Appendices B and F.
- (6) A monthly report shall be submitted to the NWCAA within 30 day of the end of each calendar month that includes the maximum monthly NO_x and CO emissions from the #4 Boiler in units consistent with the emission limits set forth in this Order.

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.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Incorporate NWCAA Regulation Appendix A for CEMS QA/QC rather than "Guidelines for Industrial Monitoring and Data Handling". Remove biennial filterable and condensable particulate testing.

Revision b: Administrative revision for AOP cleanup.



1600 South Second Street
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Original Issuance: March 3, 2005

Revisions: None

**Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #886**

Project Summary: The ConocoPhillips Company will install two new reactors on the diesel hydrotreater (DHT) to improve catalyst run life. The DHT produces ultra low sulfur diesel (ULSD) fuel that complies with the U.S. EPA's diesel sulfur specification of 15 ppm sulfur in diesel, which will be effective in 2006. The DHT Revamp Project does not hydraulically debottleneck the DHT unit above the 32,000 barrel per day nominal capacity.

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Gary A. Solari
ConocoPhillips Company
3901 Unick Road
Ferndale, WA 98248

NWAPA ID# 004-V-W

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ConocoPhillips Company
600 N. Dairy Ashford Rd.
Houston, Texas 77079

FACILITY LOCATION:

3901 Unick Road, Ferndale, Washington

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulation:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions

Permit History: The original construction order for the DHT unit (OAC #343) was issued on October 3, 1991. Requirements pertaining to the heater for the DHT unit, Heater 33F-1, were established in OAC #552 issued on June 5, 1995. The requirements for the DHT Heater in both OAC #343 and OAC #552 were rescinded and superseded by OAC #780 issued July 26, 2001. This OAC (OAC #886) incorporates the remaining DHT unit requirement in OAC #343 and hereby rescinds and supersedes that permit on the date the subject modification is completed.

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

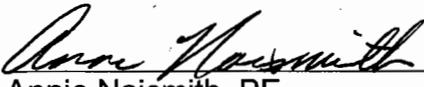
1. The DHT Unit shall be subject to federal New Source Performance Standards 40 CFR 60.590-593 Subpart GGG Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.

ConocoPhillips Company

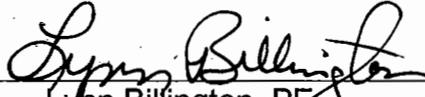
OAC #886.

March 3, 2005

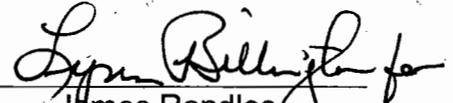
2. The relocated individual drain systems and aggregate facilities at the DHT unit shall be designed and maintained in compliance with the requirements of 40 CFR Subpart QQQ.
3. ConocoPhillips shall notify the NWCAA in writing within 30 days of initial startup.



Annie Naismith, PE
Permitting Engineer



Lynn Billington, PE
Reviewing Engineer



James Randles
Director



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Original Issuance: November 17, 2005

Revision a: November 06, 2006

Revision b: June 9, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 908b**

Project Summary: Construct and operate the Crude/FCC/Sulfur Recovery Unit project. The project includes modifications to the Crude Unit, Fluidized Catalytic Cracking Unit (FCCU) gas plant, and refinery amine system. The project also includes a new CLAUS Sulfur Recovery Unit (SRU #2) with a SCOT Tail Gas U (TGU #2), and incinerator. The SRU #2 has a design recovery capacity of 60 long tons per day of elemental sulfur when operated with oxygen injection. Modifications to the Crude Unit include installing piping, a new heat exchanger, and nozzles to the crude column and adding new trays to the crude column and preflash column. The FCCU gas plant modifications include replacing the main fractionator trays with packing, installing an additional column in the gas plant to separate the absorber-deethanizer tower into two, replacing the off-gas absorber with a larger tower, replacing the regenerator trays with packing, and adding another rich amine flash drum.

Approved Emission Units:

- Sulfur Recovery Unit #2 (SRU #2) comprised of a CLAUS Unit with emissions controlled by Tail Gas Unit #2 (TGU #2) followed by an incinerator. With oxygen injection, the SRU #2 has a recovery capacity of 60 tons per day of elemental sulfur.
- Equipment leaks from components in the Crude Unit and FCCU.
- A new oily wastewater drain installed at SRU #2.

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 908 issued November 17, 2005, and NWCAA OAC 908a issued November 06, 2006.
- This OAC is issued for SO₂, H₂SO₄ and toxic air pollutants. All other pollutants were reviewed under PSD-05-01 issued by the Washington State Department of Ecology November 16, 2005.

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
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR 63 Subpart UUU – National Emission Standards for Petroleum Refineries – Catalytic Cracking, Catalytic Reforming, and Sulfur Plant Units

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

- (1) Supplemental fuel combusted in the SRU #2 incinerator is limited to purchased natural gas.
- (2) Visible emissions from the SRU #2 incinerator stack shall not exceed ten percent (10%) opacity for more than three minutes in any consecutive 60-minute period as determined by Washington State Department of Ecology Method 9A.
- (3) Sulfur dioxide emissions from the SRU #2 incinerator stack shall not exceed any of the following emission limits:
 - (A) 250 (2.50×10^2) ppm by volume, dry basis, corrected to zero percent oxygen, based on a consecutive 12-hour rolling average.
 - (B) 150 (1.50×10^2) ppm by volume, dry basis, corrected to zero percent oxygen, based on a consecutive 720-hour rolling average.
 - (C) 22.3 tons , based on a consecutive 12-month rolling total.

Compliance with this condition shall be determined by a continuous emission monitoring

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.

system (CEMS) installed, calibrated, maintained, and operated to measure sulfur dioxide and oxygen. The CEMS shall meet the monitoring requirements of 40 CFR 60 Subpart J, the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Regulation Section 367 and Appendix A.

- (4) During normal SRU #2 operation, sweep gas from the sulfur collection header shall be controlled by routing through a closed vent system directly to the new incinerator. During SRU #2 operation, vented gases from the sulfur storage tank vent shall be routed to the front end of SRU #2. When SRU #2 is not operating, the sulfur storage tank vent shall be diverted to the SRU #1 incinerator.
- (5) The permittee shall prepare, maintain on-site, and make available to NWCAA personnel upon request, an operation and maintenance manual that identifies good air pollution control practices for minimizing emissions pursuant to 40 CFR 60.11(d) for SRU #2 including air pollution compliance monitoring and plantwide sulfur dioxide emissions abatement during upset conditions.
- (6) Any lines that allow a bypass of sulfur bearing compounds normally emitted from the TGU #2 shall be continuously monitored for the presence of flow. The permittee shall report to the NWCAA any time that flow is detected in a bypass line. This reportable event shall be considered a startup, shutdown or upset condition and reported in accordance with NWCAA Section 340 or 341.
- (7) A monthly report shall be submitted to the NWCAA within 30 day of the end of each calendar month that includes the maximum monthly SO₂ emissions from the SRU #2 in units consistent with the emission limits set forth in this Order.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a: Add option to route sulfur storage tank emissions to the SRU #1 incinerator.

Revision b: Administrative revision for AOP cleanup.



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Original issuance: February 7, 2008
 Revision a: September 11, 2008
 Revision b: April 27, 2009
 Revision c: June 7, 2012
 Revision d: April 21, 2015

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1012d**

Project Summary: Install and operate a Selective Catalytic Reduction (SCR) system on the existing 189 MMBtu/hour Vacuum Flasher Heater (4F-2) to meet NOx reduction obligations of the consent decree.

Approved Emission Units:

Selective Catalytic Reduction (SCR) system on the Vacuum Flasher Heater (4F-2)

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Phillips 66 Ferndale Refinery
 3901 Unick Road
 PO Box 8
 Ferndale, WA 98248
 NOC Contact:
 Sandy Paris, Environmental Supervisor

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Phillips 66 Company
 3010 Briarpark Drive
 Houston, TX 77042

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 1012c dated June 7, 2012.

Note that in addition to other applicable rules and regulations, this project is subject to the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart J – Standards of Performance for Petroleum Refineries

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

- Fuel combusted in Vacuum Flasher Heater shall be limited to refinery fuel gas.
- Heat input to the Vacuum Flasher Heater shall not exceed 189 MMBtu/hour maximum higher heating value (HHV) on a consecutive 12-month rolling average. Compliance with this condition shall be determined by measuring the total fuel gas flow rate to the heater from each heater pass flow meter, multiplied by the calculated HHV from gas chromatographic composition data.

- (3) Visual emissions from the Vacuum Flasher Heater shall not exceed five percent (5%) opacity for more than three minutes in any 60-minute period as determined by Washington State Department of Ecology Method 9A.
- (4) Ammonia (NH₃) emissions from the Vacuum Flasher Heater shall not exceed 10 (1.00 x 10¹) ppm by volume, dry (ppmvd) corrected to 3% O₂, on a consecutive 24-hour rolling average.
- (5) At least once every thirteen months, an ammonia emissions test shall be conducted on the Vacuum Flasher Heater using Bay Area Air Quality Management District Source Test Procedure #1B (BAAQMD ST-1B) or United States Environmental Protection Agency Method 320 (Vapor Phase Organic & Inorganic Emissions by Extractive FTIR). The test shall be conducted for no less than three, 60-minute test runs and during the test the heater shall be operated at heat input rate that is at least 90% of its rated capacity. The test may be conducted using an alternative test method and an alternative heater firing rate with prior written approval from the NWCAA. During testing, the ammonia feed rate, NO_x emissions, fuel consumption, excess oxygen, and exhaust temperature shall be recorded and this data included in the final test report submitted to the NWCAA.
- (6) Compliance with Condition 4 of this Order shall be determined by operating in accordance with the Ammonia Emissions Monitoring Plan required under Condition 7 of this Order.
- (7) A written Ammonia Emissions Monitoring Plan for the Vacuum Flasher Heater shall be maintained that establishes a predictive relationship between the heater and SCR parameters, and ammonia emissions. The plan shall define QA/QC procedures and corrective actions when parameter monitoring indicates that the ammonia emission limit in Condition 4 is exceeded. The plan shall be updated as needed when the results of stack testing required under Condition 5 of this Order are available. A copy of the initial Ammonia Emissions Monitoring Plan and all subsequent revision to the plan shall maintained onsite and available for review by the NWCAA. The initial plan and all revisions to the plan shall be dated with the date that each plan was implemented.
- (8) The following information on the Vacuum Flasher Heater shall be reported to the NWCAA on a calendar month basis. Monthly reports are due 30 days after the close of the reported month. All emission information, including calculations, shall be kept onsite for at least five years and made available to NWCAA personnel upon request.
 - (A) Consecutive 12-month rolling average NO_x emissions in lb NO_x/MMBtu.
 - (B) Monthly maximum 24-hour rolling average NO_x emissions in ppmvd @ 3% O₂
 - (C) Monthly maximum 24-hour rolling average ammonia emissions in ppmvd @ 3% O₂
 - (D) Consecutive 12-month rolling average firing rate in MMBtu/hour (HHV).

The following are included for consent decree purposes:

- (9) Nitrogen oxide (NO_x) emissions from the Vacuum Flasher Heater shall not exceed any of the following emission limits.
 - (A) For periods when the SCR is operating for the entire 24-hour period:

80 (8.0×10^1) ppm by volume, dry (ppmvd) , corrected to 3% oxygen (O_2), on a consecutive 24-hour rolling average.

- (B) For periods that include any time that the SCR is not operating due to maintenance or repair:

242 ppmvd, corrected to 3% O_2 , on a consecutive 24-hour rolling average

- (C) For all periods:

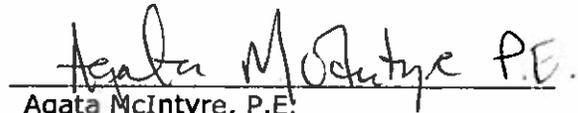
0.07 lb NO_x /MMBtu (HHV), on a consecutive 12-month rolling average.

- (10) Compliance with Condition 9 of this Order shall be determined by a NO_x and oxygen continuous emission monitoring system (CEMS) in the heater stack. The CEMS shall be installed, calibrated, maintained and operated in accordance with NWCAA Appendix A, and 40 CFR 60 Appendices B and F.

- (11) Operation of the Vacuum Flasher Heater without SCR controls shall be limited to 336 hours in any calendar year. Compliance with this condition shall be determined by maintaining a contemporaneous record of each hour that the Vacuum Flasher Heater is operated without SCR. The record shall include the time and date of each SCR startup and shutdown and the reason that the SCR was not operating. If the SCR was down for maintenance or repair, the record shall describe the type and extent of that activity, and the periods when the maintenance and repair activity was performed.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

Revision a:

1. Changed the nitrogen oxide emission limit averaging period from a 12-month rolling average period to a 365-day rolling average and defined 365-day rolling average, pursuant to language in the Consent Decree. Also removed O_2 correction and other language in the same condition.
2. Revised Condition 7 to remove the December 31, 2008 deadline for test completion. The Consent Decree requires installation by December 31, 2008, but does not require testing by that date. The sixty-day testing period after completing installation is considered sufficient.

Revision b:

1. Removed the statement regarding 40 CFR 60 Subpart Ja applicability since the promulgated version of Subpart Ja does not apply to the project.
2. Amended Condition 3 to change nitrogen oxide limits from 12 ppm @ 3% O_2 to 80 ppm @ 3% O_2 and from 0.011 lb/MMBtu to 0.07 lb/MMBtu (HHV).
3. Amended Condition 7 to extend the initial ammonia and opacity compliance test deadline to September 30, 2009.

Revision c:

1. For Consent Decree termination purposes, a maximum fired heat duty in HHV on a 365-day rolling average basis was added as Condition 2.
2. For Consent Decree termination purposes, the NOx emission limit in Condition 4b was clarified to define a day as a "calendar day".
3. The initial source test requirement upon startup was removed as it has been completed.
4. A reporting requirement for submittal of the maximum fired duty (HHV) on a 365-day rolling average basis was added as Condition 10f.

Revision d:

1. Add a provision allowing the heater to be operated without SCR during periods of maintenance and repair.
2. Convert 356-day MMBtu/hour and lb NOx/MMBtu limits to 12-month rolling averages.
3. Cleanup the OAC for better incorporation into the AOP.

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. Fed. Reg. 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: October 16, 2008

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) #1029**

Project Summary: Construct and operate a Flare Gas Recovery (FGR) system including three sliding vane compressors, air-cooled discharge and intercooler exchangers, an amine contactor, and associated piping and connection equipment. The project is designed to meet the requirements of the 2005 ConocoPhillips Company's Consent Decree to reduce fuel gas flaring and will be installed in two phases. Under the Consent Decree, the project is required to be completed by the end of 2011.

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Mr. Ryan K. Biggs
 HSE Manager
 ConocoPhillips Company
 PO Box 8
 Ferndale, WA 98248

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ConocoPhillips
 PO Box 2197
 Houston, TX 77252-2197

FACILITY LOCATION:

ConocoPhillips Company – Ferndale Refinery – 3901 Unick Road, Ferndale, Washington

Best Available Control Technology (BACT)

- BACT for Volatile Organic Compounds (VOCs) and Toxic Best Available Control Technology for Toxic Air Pollutants (TAPs) from equipment leaks has been determined to be an ongoing leak detection and repair (LDAR) program as specified in Subpart GGGa and as further defined in this Order.

In addition to other applicable rules and regulations, this project is subject to the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of Volatile Organic Compounds in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

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

1. Flare gas produced at the facility shall be routed to and recovered by the flare gas recovery unit during continuous and/or routine releases. Process upset gases and fuel gas that is released to

the flare as a result of relief valve leakage or other emergency malfunction are exempt from this requirement.

2. Compliance with Condition 1 shall be demonstrated by continuously monitoring the position of the control valve used to route the flare gas to the FGR system versus the existing flare system. The control valve position shall be alarmed to indicate FGR system bypass to the flare.
3. A record shall be kept of each occurrence when flare gas is not recovered in accordance with Condition 1. Records shall include the time, date, duration and description of each event and an estimate of the resulting sulfur dioxide emissions that would otherwise have been recovered.
4. Fugitive leak equipment (including compressors) associated with the FGR system area in VOC service shall be in compliance with 40 CFR Part 60 Subpart GGGa. Other new fugitive leak components shall be included in the leak detection and repair programs applicable to the process areas in which they are located.
5. For fugitive leak equipment associated with the FGR system area in VOC service, a semiannual report shall be submitted to the NWCAA as per the requirements of Subpart GGGa, which references 40 CFR 60.687a. Following the initial report (due six months after initial unit startup), the facility may submit reports on a semiannual schedule approved by the NWCAA.
6. The NWCAA shall be notified in writing of the completion of installation of the first phase of the project and of the second phase. This notification shall be postmarked no later than 15 days after the compressor trains' startup dates.



Annie Naismith, PE
Permitting Engineer



Mark Buford, PE
Assistant Director, Engineering



Lynn Billington, PE
Director, Engineering



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Original issuance: December 18, 2009

Revision a: October 21, 2014

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1047a**

Project Summary: Construct and operate an Enhanced Selective Non-Catalytic Reduction (ESNCR) system to control NOx emissions from the Carbon Monoxide Boiler (CO Boiler) on the Fluidized Catalytic Cracker (FCC) unit. The ESNCR system includes injection of vaporized ammonia enhanced with a hydrogen reductant into the combustion chamber of the CO Boiler. The project is designed to meet the requirements of the 2005 ConocoPhillips Company's Consent Decree to reduce nitrogen oxide emissions from the FCC unit.

Approved Emission Units:

- ESNCR system on the CO Boiler
- Equipment components in VOC service installed as part of this project

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 1047 issued December 18, 2009.

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:

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 CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

1. A leak detection and repair (LDAR) program that conforms with the requirements of 40 CFR 63 Subpart CC for existing sources shall be performed on the new ESNCR components *except* for the following replacements or additions:
 - a. 40 CFR 60.482-7a - The leak definition for valves in gas/vapor or light liquid service shall be 500 ppm
 - b. 40 CFR 60.481a - The definition of "repair" includes remonitoring to verify that emissions from the equipment are below the applicable leak definition.
 - c. 40 CFR 60.485a(b)(1)(ii) - Use a calibration gas methane or n-hexane in air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.
 - d. 40 CFR 60.485a(b)(2) - A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(8). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.
2. Emissions of ammonia from the Flue Gas Scrubber stack shall not exceed 10 (1.00×10^1) ppmvd corrected to 0% O₂ as a 24-hour average.

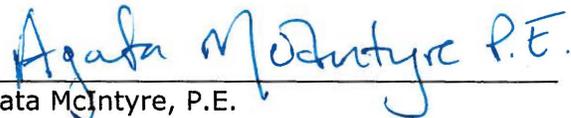
¹ Nothing in this permit is intended to, or shall, alter or waive any applicable law [including but not limited to defenses, entitlements, challenges or clarifications related to the Credible Evidence Rule, 62 FR 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated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

3. Compliance with Condition 2 of this Order shall be determined at least once every thirteen (13) months using Bay Area Air Quality Management District Source Test Procedure #1B (BAAQMD ST-1B), United States Environmental Protection Agency Method 320 (Vapor Phase Organic & Inorganic Emissions by Extractive FTIR), or other alternative method approved by the NWCAA. Results shall be the average of three 60-minute test runs during partial burn operation at the FCC Unit. During any testing, the permittee shall record ammonia feed rate, NOx emissions, fuel consumption, and other operating parameters. Operating parameters shall be included in the written test report.
4. The permittee shall develop and implement an Ammonia Emissions Monitoring Plan to establish a predictive relationship between the FCC Unit and ESNCR operating parameters and emissions of ammonia. The plan shall define QA/QC procedures and corrective actions when parameter monitoring indicates the emission limit in Condition 3 may be exceeded. The acceptability of the plan will be assessed based on the initial and annual source test results and may be amended and improved accordingly.
5. The owner or operator shall maintain and operate the ESNCR system in accordance with good air pollution control practices and in a manner minimizing particulate, ammonia, and nitrogen oxide emissions from the FCC unit.



Daniel A. Mahar, P.E.
Environmental Engineer



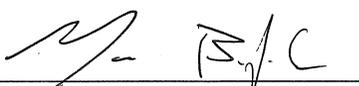
Agata McIntyre, P.E.
Engineering Manager

Revision a: Remove requirement to operate ESNCR at all times the FCCU is operating. Remove one-time only requirement that have been completed. Adjust source test frequency to provide flexibility.

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

1. The owner/operator shall provide written notification to the NWCAA of the startup date of the Crude Distillation Unit, the FCC Gas Plant, and the Alkylation Unit following installation of the new equipment. The notice shall be postmarked no later than 15 days after startup of the unit, and shall include a reference to OAC #1108.


Anne Naismith, PE
Senior Engineer


Mark Buford, P.E.
Assistant Director

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. Fed. Reg. 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.



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Original issuance: December 08, 2011

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) #1109**

Project Summary: Reconfigure the Crude Distillation Unit to reduce the benzene content of finished gasoline product to comply with the EPA’s Mobile Source Air Toxic (MSAT) Phase 2 rule. To accomplish the reduction, tube bundles in six condensers will be replaced, distillation tower trays will be re-trayed, internal equipment in the Minalk Reactor will be replaced, and piping will be replaced at two existing storage tanks (550x102 and 550x106). The project does not increase capacity or throughput downstream of the Crude Distillation Unit.

Approved Emission Units:

- New and existing equipment components in the Crude Distillation process unit conveying volatile organic compound and hazardous air pollutant materials.

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ConocoPhillips Company
 PO Box 8
 Ferndale, WA 98248
 NOC Contact: Ryan K. Biggs

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ConocoPhillips
 PO Box 2197
 Houston, TX 77252-2197

FACILITY LOCATION:

ConocoPhillips Company – Ferndale Refinery – 3901 Unick Road, Ferndale, Washington

Permit History

- This is the original permit for the project.

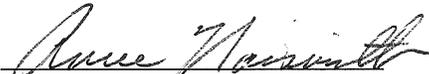
Note that in addition to other applicable rules and regulations, this project is subject to the following federal regulations:

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 which references portions of Subpart VVa.

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

1. The owner/operator shall provide written notification to the NWCAA of the startup date of the Crude Distillation Unit following installation of the new equipment. The notice shall be postmarked no later than 15 days after startup of the unit, and shall include a reference to OAC #1109.


Anne Naismith, PE
Senior Engineer


Mark Buford, P.E.
Assistant Director

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. Fed. Reg. 8315 (Feb. 27, 1997)] concerning the use of data for any purpose under the Act, generated by the reference method specified herein or otherwise.



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Original issuance: February 16, 2012

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) #1111**

Project Summary: Construct and operate an ethanol truck unloading facility with new equipment consisting of a 270,000-gallon ethanol storage tank, secondary containment, piping and associated valves and components, truck unloading hoses, a truck unloading pump, a transfer pump, new drive area and a truck unloading pad. The project is designed to meet the refinery's requirement to blend ethanol in their gasoline products.

Approved Emission Units:

- New and existing equipment components associated with the new ethanol truck unloading facility in the Offplot Control Area.
- New 270,000-gallon ethanol storage tank with internal floating roof and primary and secondary seals.

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Mr. Ryan K. Biggs
 HSE Manager
 ConocoPhillips Company
 PO Box 8
 Ferndale, WA 98248

**O
W
N
E
R**

ConocoPhillips
 PO Box 2197
 Houston, TX 77252-2197

FACILITY LOCATION:

ConocoPhillips Company – Ferndale Refinery – 3901 Unick Road, Ferndale, Washington

In addition to other applicable rules and regulations, this project is subject to the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A – General Provisions
- 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.
- 40 CFR Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- 40 CFR Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants/Maximum Achievable Control Technology Standards

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. New equipment components with fugitive emissions are not subject to this subpart. The ethanol storage tank is subject to Subpart CC Group 2 requirements.

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

1. The ethanol storage tank shall be equipped with an internal floating roof with both a primary and secondary seal. Records documenting the roof type, seals, and monitoring shall be maintained while the storage tank is in ethanol service.
2. A written notice of completion of the Ethanol Blending Project shall be submitted to the NWCAA and postmarked within 15 days after completion of the project.



Anne Naismith, PE
Senior Engineer


Mark Buford, P.E.
Assistant Director

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Original Issuance: June 7, 2013

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1152**

Project Summary: Construct and operate a facility to transfer crude oil from railcars to existing refinery storage tanks. The facility includes a rail spur and crude oil unloading area capable of accommodating the concurrent unloading of up to 54 railcars, and associated piping, spill containment and wastewater handling systems.

Approved Emission Unit:

- Crude Unloading Facility and associated oily wastewater collection and conveyance

Owner/Operator	Facility Name and Location
Phillips 66 Company PO Box 8 Ferndale, WA 98248 Contact: Dan Toperosky, HS&E Manager	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

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 QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

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

- 40 CFR 61 Subpart A - General Provisions
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 - Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

1. The Crude Unloading Facility shall unload only crude oil with a benzene content that is equal to, or less than 3.0% by weight.
2. The following records shall be maintained for each rail shipment received at the Crude Unloading Facility;

- a. Type of material and its origin,
 - b. Benzene content in percent by weight,
 - c. Volume of the shipment in barrels, and
 - d. Time period and dates that the shipment was unloaded.
3. Railcar unloading operations shall be conducted using a combination of vapor balancing and direct vacuum breaker methods that prevent emissions to the atmosphere from vapor balancing lines and stand pipes from exceeding 500 ppm VOC as determined using 40 CFR 60 Appendix A Method 21 (EPA Method 21).
 4. At least once every 12 months, all equipment used for vapor balancing conducted in accordance with Condition 3 of this Order, shall be visually inspected to ensure proper operation. Potential leaks identified during the visual inspection shall be monitored within 24 hours of identification using EPA Method 21. Any leaks found that exceed 500 ppm VOC shall be repaired, or the associated equipment removed from service, prior to unloading the next shipment.
 5. Maintain a record of the results of each visual inspection, results of instrument monitoring, information on leaking components that are repaired, and information on equipment that taken out of service in accordance with Condition 4 of this Order.
 6. All vents from the oily wastewater system associated with the Crude Unloading Facility shall be connected to a closed-vent system and control device designed and operated in accordance with §61.349 of 40 CFR 61 Subpart FF.
 7. All equipment, as the term is defined in 40 CFR 60.591, located at the Crude Unloading Facility shall be in a leak detection and repair program meeting the monitoring, recordkeeping and reporting provisions of 40 CFR 60 Subpart GGGa and its referenced requirements under 40 CFR 60 Subpart VVa.
 8. Phillis 66 shall provide the NWCAA with a written notification of the date of initial crude unloading at the Crude Unloading Facility. This notice shall be postmarked no later than 15 days after the start of unloading operations and shall include a reference to OAC 1152.



Daniel A. Mahar, P.E.
Environmental Engineer



Mark Asmundson
Director

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. Fed. Reg. 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 RCW 43.21B, 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: March 07, 2014

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1174**

Project Summary: Construct and operate the Flare Infrastructure Upgrade Project comprised of a new steam-assisted, elevated flare, a new blowdown drum to eliminate liquids from entering the flare, a new water seal system at the base of the flare, and associated piping. The project includes decommissioning the existing ZTOF and ground flare.

Approved Emission Units:

- One (1) steam-assisted, elevated flare, 199 foot height
- Equipment leaks from new components installed as part of the project
- An oily wastewater drain installed as part of the project

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

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 Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A - General Provisions
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

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

- 1 Purge gas and pilot gas used in the elevated flare shall be limited to natural gas.
- 2 Visible emissions from the elevated flare shall not exceed five percent (5%) opacity for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A.
- 3 Except where operation would be unsafe or endanger one or more flare gas recovery compressors, the Flare Gas Recovery Unit (FGRU) shall be operated during all flaring events.
- 4 No flaring shall occur when the pressure upstream of the elevated flare water seal is less than 60 inches of water column (60" H₂O).
- 5 The following parameters shall be continuously monitored.
 - (A) The water level in the elevated flare water seal,
 - (B) The pressure in inches of water column upstream of the elevated flare water seal,
 - (C) The volumetric flow rate in actual (acfm) and standard cubic feet per minute (scfm) of gasses routed to the flare,
 - (D) The exit velocity in meters per second (mps) of gasses at the elevated flare tip calculated as a function of volumetric flow consistent with the applicable provisions of 40 CFR 60 Subpart A, §60.18 and 40 CFR 63 Subpart A, §60.11,
- 6 For each flaring event, a contemporaneous record shall be maintained for each monitoring parameter required by Condition 5 of this Order. The record shall be in a time resolution of no less than one value per minute. The record shall clearly state the beginning and end times/dates for each period that flaring occurs.
- 7 The information for determining compliance with the design specifications for flares specified in 40 CFR 60 Subpart A, §60.18(c)(3) and 40 CFR 63 Subpart A, §63.11(b)(6)&(b)(7), shall be submitted to the NWCAA by no later than the startup date of the new elevated flare. This information shall include all calculations and assumptions used to make these compliance determinations. This is a one-time only requirement that does not require submittal of any subsequent revisions to the initial information submitted in accordance with this condition.

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.

- 8 The flare management plan required by 40 CFR 60 Subpart Ja, §60.103a(a) shall be submitted to the NWCAA by no later than the startup date of the new elevated flare.
- 9 All process equipment in VOC service (10% by weight) installed as part of the Flare Infrastructure Upgrade Project shall be in a leak detection and repair program meeting the monitoring, recordkeeping and reporting provisions of 40 CFR 60 Subpart GGa and its referenced requirements of 40 CFR 60 Subpart VVa.
- 10 The ZTOF and ground flare shall be decommissioned upon successful commissioning of the new elevated flare. A written notice of the date of decommissioning of each flare shall be submitted to the NWCAA within 15 days of its decommissioning. The notice shall include a description of the decommissioning method (e.g., blinding, car-seal) and a reference to OAC 1174.
- 11 The facility shall provide the NWCAA with a written notification of the initial pilot light firing date and date of commissioning of the new elevated flare. The notices shall be postmarked no later than 15 days after the initial pilot firing date and date of commissioning of the flare, respectively. The notices shall include a reference to OAC 1174.



Daniel A. Mahar, P.E.
Environmental Engineer



Mark Buford, P.E.
Assistant Director



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Original Issuance: October 23, 2015

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1223**

Project Summary: Construct and operate a new Tier III Hydrotreater Unit. The new process unit will remove sulfur from hydrocarbon feedstocks to achieve compliance with U.S. EPA Tier III sulfur standards for gasoline.

Approved Emission Units:

- One (1) Tier III Hydrotreater Charger Heater with a heat input capacity of 18.7 MMBtu/hour (HHV) combusting refinery fuel gas (ID# 41F-1)
- Equipment leaks from new components at the Tier III Hydrotreater Unit
- Connection to the existing oily wastewater drain system

Owner/Operator	Facility Name and Location
Phillips 66 Ferndale Refinery P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

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 Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
- 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 which references portions of Subpart VVa.
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A – General Provisions
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A – General Provisions

- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional 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. Fuel combusted in the Tier III Hydrotreater Charge Heater is limited to natural gas and refinery fuel gas.
2. Visible emissions from the Tier III Hydrotreater Charge Heater must not exceed five percent (5%) opacity for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A.
3. The hydrogen sulfide (H₂S) content of fuel combusted in the Tier III Hydrotreater Charge Heater must not exceed the following.
 - a. 50 ppmvd, 24-hour rolling average.

Compliance with this condition shall be demonstrated by continuously monitoring the H₂S content of the fuel gas combusted in the Tier III Hydrotreater Charge Heater. The monitor shall be installed, and operated in accordance with 40 CFR 60 Subpart A, Subpart Ja, and Appendix F, and with NWCAA Section 367 and Appendix A.

4. Emissions of nitrogen oxides (NO_x) from the Tier III Hydrotreater Charge Heater must not exceed 0.035 lb/MMBtu. Compliance with this condition shall be determined by an average of three test runs during periodic testing conducted in accordance with Condition 6 of this Order.
5. Emissions of carbon monoxide (CO) from the Tier III Hydrotreater Charge Heater must not exceed 0.030 lb/MMBtu. Compliance with this condition shall be determined by an average of three test runs during periodic testing conducted in accordance with Condition 6 of this Order.
6. An initial performance test must be conducted on the Tier III Hydrotreater Charge Heater within 120 days of initial firing to demonstrate compliance with Conditions 4 and 5 of this Order. Periodic testing must begin no less than 36 months following completion of the previous test. During testing, the Tier III Hydrotreater Charge Heater shall be fired at a rate that is representative of normal operations at the time of testing.

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.

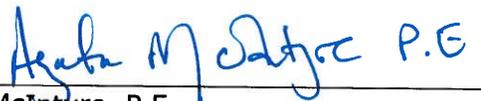
Pursuant to Section 300.10 of the NWCAA Regulation and ch 43.21B RCW, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon the NWCAA within 30 days of the date the applicant receives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

All testing shall be conducted in accordance with 40 CFR 60 Appendix A, Methods 3A and 19, and NWCAA Section 367 and Appendix A. The following test methods shall be used unless an alternative method is approved in writing in advance by the NWCAA.

- a. NOx - 40 CFR 60 Appendix A, Method 7E
 - b. CO - 40 CFR 60 Appendix A, Method 10, 10A or 10B
7. An operating and maintenance (O & M) manual for the Tier III Hydrotreater Charge Heater low NOx burners must be maintained on site. The heater shall be maintained and operated consistent with this plan.
 8. The facility must provide written notification to the NWCAA of the initial startup date of the Tier III Hydrotreater Charge Heater. The notice shall be postmarked no later than 15 days after initial firing of the heater on refinery fuel gas. The notice shall include a reference to OAC 1223.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager



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Original Issuance: February 11, 2016

**Northwest Clean Air Agency (NWCAA) hereby issues
 Order of Approval to Construct (OAC) 1232**

Project Summary: Replace the existing crude distillation tower with a new distillation tower. The tower being replaced will be decommissioned prior to startup of the new tower. The project also includes removal of pre-flash 1C-7 vessel, relocation of an existing pump, relocation of an oily water drain and various changes to piping. The project does not change the crude processing capacity at the Crude Distillation Unit.

Approved Emission Unit:

- Process equipment components at the Crude Distillation Unit.

Owner/Operator	Facility Name and Location
Phillips 66 Company P.O. Box 8 Ferndale, WA 98248 Contact: Sandy Paris, Environmental Supervisor	Phillips 66 Ferndale Refinery 3901 Unick Road Ferndale, WA 98248

Note that in addition to other applicable rules and regulations, one or more of 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 GGGa - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

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

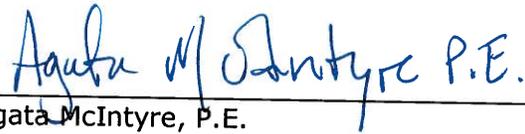
- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

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

- (1) The facility shall provide written notice to the NWCAA of the startup date of the Crude Distillation Unit following completion of the crude distillation tower replacement project. The notice shall include a statement confirming that the replaced crude distillation tower has been decommissioned. The notice shall be postmarked no later than 15 days after startup of the Crude Distillation Unit and shall include a reference to OAC 1232.



Daniel A. Mahar, P.E.
Environmental Engineer



Agata McIntyre, P.E.
Engineering Manager

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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: <http://www.eluho.wa.gov/> under PCHB.