Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1289

**Project Summary:** Installation and operation of a new booster compressor and associated components at the Coker Unit. Addition of valve bypasses and a redundant rupture-pin relief device at the Coker Unit. Addition of a tie-in from the Flare Gas Recovery Unit (FGRU) to the Coker Unit compressor suction knockout drum.

**Approved Emission Units:**

- One booster compressor within the existing Coker Unit
- New components in VOC service within the existing Coker Unit and FGRU associated with the booster compressor, the tie-in between the FGRU and Coker Unit, redundant pressure relief device, and valve bypasses installed as part of this project.

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
</tr>
</thead>
</table>
| BP Cherry Point Refinery  
4519 Grandview Road  
Blaine, WA 98230  
Contact: Ryan O'Larey | BP Cherry Point Refinery  
4519 Grandview Road  
Blaine, WA 98230 |

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

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and**

(1) Provide a written notice to NWCAA reporting the startup date of the booster compressor. The notice shall be postmarked no later than 15 days after startup and shall include a reference to OAC 1289.

RoIyn Jones, E.I.T.  
Environmental Engineer

Agata McIntyre, P.E.  
Engineering Manager
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 1201b

Project Summary: Modifications to the sulfur plant to improve the refinery’s ability to process sulfur. This project will help the facility reach a long term average of 270 long tons per day (LTPD). The project includes an increase in the potential hourly throughput of sulfur.

The following physical changes are proposed:
- Modification to heat exchangers to improve sulfur cooling,
- Re-rating of sulfur plant’s overall operating pressure,
- Modifying the pure oxygen system to enable higher oxygen flow rates to the north and south sulfur plant,
- Upgrade trays in the north and south regenerator towers

Approved Emission Units:

Sulfur Recovery Unit (SRU) with a long-term elemental sulfur recovery capability of 270 LTPD. This SRU is comprised of two Claus sulfur recovery units, two tail gas units, elemental sulfur storage pits and two caustic scrubbers. Individual emission points are listed below.
- #1 Tail Gas Unit (#1 TGU) Incinerator Stack
- #2 Tail Gas Unit (#2 TGU) Stack
- North and South Sulfur Pits

<table>
<thead>
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<tbody>
<tr>
<td>BP Products North America Inc.</td>
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<td>BP Cherry Point Refinery</td>
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<td>4519 Grandview Road</td>
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<td>Blaine, WA 98230</td>
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<tr>
<td>Contact: Sahil Patel, Environmental Engineer</td>
<td></td>
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</tbody>
</table>

Permit History:
- As of the date of issuance, this Order supersedes NWCAA OAC 1201a issued April 16, 2015.

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
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Ja - Standards of Performance for Petroleum Refineries
**National Emission Standards for Hazardous Air Pollutants (NESHAP)**


**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions**:

1. Supplemental fuel combusted in the #2 Tail Gas Unit (TGU) shall be limited to natural gas from a pipeline.

2. Visible emissions from the Incinerator and #2 TGU stacks shall not exceed 10 percent opacity for more than three minutes in any 60-minute period as determined by Department of Ecology Method 9A.

3. Sulfur dioxide (SO$_2$) emissions from the Incinerator and #2 TGU stacks shall not exceed any of the following emission limits:
   
   (A) $250 \times (2.50 \times 10^2)$ ppm by volume, dry basis, corrected to zero percent oxygen, based on a 12-hour rolling average. The 12-hour rolling average shall be calculated based on corrected hourly averages for the 12 most recent, consecutive clock hours (BACT limit), and
   
   (B) $1,500 \times (1.50 \times 10^3)$ ppm by volume, dry basis, corrected to zero percent oxygen, based on a one-hour average.

Compliance with this condition shall be determined by a continuous emission monitor system (CEMS) installed, calibrated, maintained, and operated to measure SO$_2$ and oxygen in each stack. Each monitor shall meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A - Ambient Monitoring, Emission Testing, and Continuous Emission and Opacity Monitoring.

Any one-hour average that is invalidated due to the CEM exceeding its upper range or invalidated due to inactivating the CEM when SO$_2$ concentrations are over the limit specified in Condition (3)(B) shall be prima-facie evidence that that limit has been exceeded.

4. The BACT emission limit listed in Condition (3)(A) ($250$ ppm SO$_2$, 12-hr-rolling) does not apply during startup and shutdown events as defined in 40 CFR §63.2. The following applies during startup and shutdown events:

---

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.
Send any startup or shutdown purge gases to a thermal oxidizer or incinerator operated at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O_2) concentration of two volume percent (dry basis).

(5) Total tons of SO_2 emitted from the Sulfur Recovery Unit shall not exceed 99 tons during any consecutive 12-month rolling period. The most recent 12-month rolling total shall be reported to the NWCAA monthly.

(6) Emissions of SO_2 from the #2 TGU stack and the Incinerator shall not exceed:

(A) #2 TGU: 24.0 lb/hour, 1-hr average - 40 CFR 60, Appendix A, Method 6C, and

(B) Incinerator Stack: 40.0 lb/hour, 1-hr average – 40 CFR 60, Appendix A, Method 6C

Compliance with this condition shall be determined by conducting annual source testing within 13 months of the previous source testing date. Any proposed alternative test methods shall be approved in advance by the NWCAA. All testing shall be conducted under maximum operating rates that are at, or above, 80% of facility sulfur complex capacity. The source tests shall be conducted in accordance with NWCAA Section 367 and NWCAA Appendix A.

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(C) Supplemental natural gas rate (scf/hr), and

(D) Sulfur plant production (long tons/day).

(7) Prepare an operation, maintenance, and monitoring plan (OMMP) according to the requirements of §63.1574(f) and operate at all times according to the procedures in the plan. If the plan is revised, submit the revisions to NWCAA for review and approval prior to implementation.

(8) Except as provided in Condition (12), emissions from the elemental sulfur storage pits at the Sulfur Recovery Unit shall be controlled through a closed vent system that is routed through a device capable of meeting the emission limits and monitoring requirements of Condition (3). During periods of maintenance, measures shall be taken to minimize emissions during periods for which the sulfur pit vents were not controlled.

(9) Coker blowdown vapors shall be routed to and recovered by the coker wet gas recovery compressor. Compliance with this condition shall be demonstrated by:

(A) Continuously monitor and record the operating position of the valve directing blowdown vapors to suction of the wet gas compressor and pressure in the blowdown drum, and,

(B) Following written standard operating procedures that assure that coker blowdown vapors are properly routed to coker wet gas compressor, except:

i. When pressure in the blowdown drum is near the suction pressure of the wet gas compressor, and
ii. During a process upset or when maintenance is required,

(C) A record shall be kept of each process upset or maintenance activity when coker blowdown vapors are not recovered in accordance with condition (9)(B)ii. Records shall include the time, date, duration and description of each event and an estimate of the resulting SO₂ emissions that would have otherwise been recovered.

(10) When the coker wet gas recovery compressor is unavailable due to a process upset or maintenance activity, both flare gas recovery compressors shall be lined up to the low-pressure flare header during the coke drum blowdown process. The vent gas from the sour water storage tanks must continue to be routed upstream of the #1 TGU incinerator.

(11) Any lines that allow a by-pass of sulfur bearing compounds normally emitted from the incinerator or #2 TGU stacks, shall be monitored for the presence of flow in accordance with 40 CFR 63 Subpart UUU. BP shall report to the NWCAA, any time that flow is detected in a by-pass line. This reportable event shall be considered a startup, shutdown or upset condition and reported in accordance with NWCAA Section 340 or 341.

(12) During periods when the Incinerator is taken off-line for maintenance and emissions from the sulfur pits and sulfur tank are no longer routed to the Incinerator, the following monitoring plan shall be utilized to determine emissions from the sulfur pits.

(A) Once per shift, measure and record the vented scrubber overhead stack emissions, as appropriate, with a colorimetric detector tube to determine H₂S and SO₂ concentrations in the vented gas.

(B) At least once per shift, maintain records to demonstrate that sulfur pit emissions are being collected and treated.

(C) Report total mass emissions of H₂S and SO₂ in monthly emissions reports during periods when this monitoring plan is utilized.

(D) Record the time periods during which the sulfur pit vents were not controlled and describe measures that were taken to minimize emissions during these periods.

(13) Emissions from the Incinerator shall not exceed:

(A) 4.0 lb/hr NOₓ, 1-hr average, 40 CFR 60, Appendix A, Method 7E, and

(B) 52.5 lb/hr CO, 1-hr average, 40 CFR 60, Appendix A, Method 10

Compliance with this condition shall be determined by conducting annual source testing within 13 months of the previous test. Any proposed alternative test methods shall be approved in advance by the NWCAA. All testing shall be conducted under maximum operating rates that are at, or above, 80% of facility sulfur complex capacity. The source tests shall be conducted in accordance with NWCAA Section 367 and NWCAA Appendix A.

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:
(C) Supplemental natural gas rate (scf/hr), and

(D) Sulfur plant production (long tons/day).

Robyn Jones, E.I.T.
Environmental Engineer

Agata McIntyre, P.E.
Engineering Manager

Revision a: The north and south regenerator towers tray upgrade was added to the project summary.

Revision b: Remove reference to obsolete SSMP and replace BACT compliance demonstration with alternative work practice standard from NESHAP UUU. Clarify source test reporting requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 1200

Project Summary:
- Replace two existing delayed coker unit heaters used for thermal cracking with two new, larger, heaters. Each new heater is rated at 303 MMBtu/hr (HHV) and will be fired on coker off-gas.
- Replace the boiler feed water circulation pump to recover heat from the coker unit.
- Install a lean oil absorption system with compressor to recover additional light components from coker off gas. These recovered hydrocarbons will be sent to downstream units to recover light components.
- Install new bypasses for heat exchangers in the crude unit preheat system to accommodate online cleaning capability.

Approved Emission Units:
- Two (2) 303 MMBtu/hr (HHV) capacity coker heaters (East and West), with ultra-low NOx burners (ULNB), coker off-gas as a fuel source.
- One (1) Lean Oil Adsorption System for recovering light components from coker off-gas.
- Components at the delayed coker unit (including lean oil adsorption system) and crude unit.

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<tr>
<th>Owner/Operator</th>
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<tbody>
<tr>
<td>BP West Coast Products LLC</td>
<td>BP Cherry Point Refinery</td>
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<tr>
<td>Contact: Steve Mrazek,</td>
<td></td>
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<tr>
<td>Senior Environmental Superintendent</td>
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</table>
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
- 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 [references portions of Subpart VVa].
- 40 CFR 60 Subpart NNN - Standards of Performance for Synthetic Organic Chemical Manufacturing - Distillation

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

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions**:1

1. Comply with the requirements of 40 CFR 60 Subpart GGGa for components at the delayed coker unit (including lean oil adsorption system).
2. Comply with the requirements of 40 CFR 60 Subpart GGGa for components at the crude unit.
3. Only two coker heaters shall operate (process residual oil) at any time.
4. Within 12 months after the date when the first new coker heater (East or West heater) begins to processes residual oil, permanently shut-down one of the two existing coker heaters (North or South heater).
5. Within 12 months after the date when the second new coker heater (East or West heater) begins to processes residual oil, permanently shut-down the second existing coker heater (North or South heater).

---

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.cluho.wa.gov/ under PCHB.
(6) Provide written notice to the NWCAA of the startup dates of the East Coker Heater, the West Coker Heater, and the Lean Oil Adsorption System. Send the notice(s) (postmark) no later than 15 days after startup of each unit and include a reference to OAC 1200.

(7) Provide written notice to the NWCAA of the permanent shut-down dates of the North Coker Heater and South Coker Heater. Send the notice(s) (postmark) no later than 30 days after the permanent shut-down of each heater and include a reference to OAC 1200.

Agata McIntyre, P.E.  5/24/17
Engineering Manager

Mark Buford, P.E.  5/24/17
Executive Director
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1142

Project Summary: Rail Logistics Project (NE Rail Facility) comprised of construction and operation of a new railcar unloading terminal to transfer crude oil from railcars to existing refinery storage tanks. The terminal includes a 1.9 mile rail loop, and an unloading area capable of accommodating the concurrent unloading of up to 52 railcars, as well as associated piping, spill containment and wastewater handling systems.

Approved Emission Unit:

- NE Rail Facility and associated oily wastewater collection and conveyance

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<tr>
<td>Contact: Scott Inloes,</td>
<td></td>
</tr>
<tr>
<td>Senior Environmental Engineer</td>
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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 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 conditions:

1. The benzene content of petroleum liquids unloaded at the railcar unloading NE Rail Facility shall not exceed 1.8% by weight.

2. The following records shall be maintained for each rail shipment received at the NE Rail Facility:
a. Type of material and its origin (e.g., Bakken crude oil from North Dakota),
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 lines between the railcar vent and the crude oil sump from exceeding 500 ppm VOC as determined using 40 CFR 60 Appendix A (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 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 each inspection, results of monitoring, leak repairs and equipment disconnects conducted in accordance with Condition 4 of this Order.

6. All vents from the oily wastewater system associated with the NE Rail 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 process equipment at the NE Rail 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 of 40 CFR 60 Subpart VVa.

8. BP shall provide NWCAA shall provide a written notification to the NWCAA of the date that unloading begins at the NE Rail Facility. This notice shall be postmarked no later than 15 days after the start of unloading operations and shall include a reference to OAC 1142.

Daniel A. Mahar, P.E.
Environmental 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.

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.
Northwest Clean Air Agency (NWCAA) hereby issues 
Order of Approval to Construct (OAC) 1141

Project Summary: Naphtha Reliability Improvement Project designed to improve mechanical integrity of the Naphtha Hydrodesulfurization Unit, increase process and personnel safety, and to increase the run time of the unit between maintenance turnarounds.

Approved Emission Units:
- Modifications to the Naphtha Hydrodesulfurization (HDS) Unit including adding a new reactor, modifying a compressor, a reactor and a heat exchanger, and rerouting hydrocarbon streams to decouple the Naphtha HSD Unit from the Hydrocracker Unit.

<table>
<thead>
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<th>Owner/Operator</th>
<th>Facility Name and Location</th>
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<tr>
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<td>BP Cherry Point Refinery</td>
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<td>4519 Grandview Road</td>
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<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Scott Inloes, Senior Environmental Engineer</td>
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</table>

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

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

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

1. The NWCAA shall be provided written notification of the startup date of the Naphtha HDS Unit following completion of the Naphtha Reliability Improvement Project. The notice
shall be postmarked no later than 15 days after startup of the Naphtha HDS Unit and shall include a reference to OAC 1141.

Daniel A. Mahar, P.E.  
Environmental 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.

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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #1122

Project Summary: Construction of the Hydrocracker Unit Atmospheric Relief Valve Project that includes installation of a new knockout drum, pressure safety valve (PSV) and lines to route emergency releases the flare to improve safety.

Approved Emission Units:
• Modifications to the Hydrocracker Unit including a new knockout drum, a new PSV and new valves and connectors.

FACILITY LOCATION:
Cherry Point Refinery
4519 Grandview Road, Blaine, Washington

Permit History
• As of the date of issuance, this Order supersedes the NWCAA Order of Approval to Construct #850 issued December 1, 2003.

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 Part 60 Subpart A - General Provisions
• 40 CFR Part 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 [references portions of Subpart VVa].
National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries [states that equipment leaks subject to 40 CFR 60 Subpart GGGa comply using the provisions of Subpart GGGa]

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

1. The NWCAA shall be provided written notification of the startup date of the Hydrocracker Unit following completion of the Atmospheric Relief Valve Project. The notice shall be postmarked no later than 15 days after startup of the Hydrocracker Unit and shall include a reference to OAC #1122.


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.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #1067a

Project Summary: Retrofit the Hydrocracker 1st Stage Fractionator Reboiler with ultra-low NOx burners (ULNB). The retrofit project will not change nominal the firing capacity of the Reboiler. NOx reductions from the project will be used for PSD netting to offset new emissions units associated with the Clean Fuels Project approved under OAC #1064.

Approved Emission Units:
- Hydrocracker 1st Stage Fractionator Reboiler with a nominal high input capacity of 198 MMBtu per hour and retrofit with ultra-low NOx burners (ULNB).

APPLICANT
Jeff Pitzer
Business Unit Leader
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Valerie Lagen

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
BP Cherry Point Refinery
4519 Grandview Road, Blaine, Washington 98230

Permit History
- The effective date of this Order is the startup date of the Hydrocracker 1st Stage Fractionator Reboiler following completion of the ULNB Retrofit Project.
- Beginning on the effective date, this Order supersedes item 15-1 451 of NWCAA approval letter dated June 8, 1970, requiring the 1st Stage Fractionator Reboiler to combust “fuel gas only”.
- Beginning on the effective date, this Order supersedes Condition 11 of NWCAA OAC #351e dated May 10, 2010, requiring a 27 ton per year NOx reduction at the 1st Stage Fractionator Reboiler with the installation of low-NOx burners.
• Beginning on the effective date, this Order supersedes NWCAA OAC #1067 dated November 29, 2010.

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

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

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

As authorized by the Northwest Clean Air Agency Regulation Section 300, this Order subjects the following emission units to the conditions set forth herein:

**Hydrocracker 1st Stage Fractionator Reboiler**

1. Fuel combusted in the Hydrocracker 1st Stage Fractionator Reboiler shall be limited to natural gas and/or refinery fuel gas.

2. Heat input to the Hydrocracker 1st Stage Fractionator Reboiler shall not exceed 198 MMBtu per hour higher heating value (HHV), based on a 365-day rolling average.

3. Visual emissions from the Hydrocracker 1st Stage Fractionator Reboiler 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.

4. Nitrogen oxides (NOx) from the Hydrocracker 1st Stage Fractionator Reboiler shall not exceed any of the following emission limits;
   a. 9.9 lb/hour, 24-hour rolling average
   b. 0.05 lb/MMBtu, 24-hour rolling average

5. Continuous compliance with Condition 4 of this Order shall be determined by operating a certified continuous emission monitoring system (CEMS) for nitrogen oxides and oxygen within 180 days of startup of the Hydrocracker 1st Stage Fractionator Reboiler following completion of the ULNB Retrofit Project. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A. Continuous compliance shall be demonstrated using calculations described in 40 CFR 60 Appendix A, Method 19, using appropriate F-factors that are based on fuel composition analyses, and the Btu heat input rate to the Reboiler.
6. Carbon monoxide (CO) from the Hydrocracker 1st Stage Fractionator Reboiler shall not exceed the following emission limit:

   a. 0.04 lb/MMBtu, 24-hour rolling average,

      During periods when this performance based limit is exceeded, the following mass emission rate limit shall be used to demonstrate compliance:

   b. 7.9 lb/hour, 24-hour rolling average

Compliance with this condition shall be determined within 180 days of startup of the Hydrocracker 1st Stage Fractionator Reboiler following completion of the ULNB Retrofit Project by complying with either Condition 7, or Condition 8 of this order. There shall be no more than 12 months without monitoring during any transition between these two compliance options.

7. Compliance with Condition 6 of this Order shall be determined by conducting an initial source test and subsequent annual source tests within eleven to thirteen months of the anniversary of the initial test. Each test shall be conducted in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 3A, 4, and 10, 10A or 10B, and NWCAA Section 367 and Appendix A. Alternative test methods may be used if approved in advance by the NWCAA.

During source testing, the Reboiler shall be fired at a rate that is as close to its maximum capacity as practical. If the Reboiler is fired at a rate that is less than 90% of its maximum capacity, the reason shall be explained in the source test report. Compliance shall be determined by the results of the average of three source test runs.

8. Compliance with Condition 6 of this Order shall be determined by operating a certified continuous emission monitoring system (CEMS) for carbon monoxide and oxygen within 180 days of startup of the Hydrocracker 1st Stage Fractionator Reboiler following completion of the ULNB Retrofit Project. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A. Continuous compliance shall be demonstrated using calculations described in 40 CFR 60 Appendix A, Method 19, using appropriate F-factors that are based on fuel composition analyses, and the Btu heat input rate to the Reboiler.

9. An operating and maintenance (O & M) manual for the ultra-low NOx burners installed on the Hydrocracker 1st Stage Fractionator Reboiler shall be maintained on site.

10. The owner/operator shall maintain the following records for the Reboiler. These records shall be maintained for a period of no less than five years from the date of generation and shall be readily available for review by the NWCAA.

    a. Heat input in MMBtu/hour HHV, as daily and 365-day rolling averages,

    b. Stack NOx in ppmvd at 3% oxygen, lb/MMBtu, and lb/hour, as hourly and 24-hour rolling averages,

    c. Results of any fuel composition analysis used to determine Method 19 F factors, and Method 19 calculations used to determine mass emission rates, and
d. If Condition 8 (CEMS) is used to comply with the CO limits specified in Condition 6 of this Order; stack CO in ppmvd at 3% oxygen, lb/MMBtu, and lb/hour, as hourly and 24-hour rolling averages.

11. The owner/operator shall notify the NWCAA in writing of the startup date of the Hydrocracker 1st Stage Fractionator Reboiler following completion of the ULNB Retrofit Project. This notification shall be postmarked no later than 15 days after the startup date of the Reboiler.

Daniel A. Mahar, P.E.  
Environmental Engineer

Mark Buford, P.E.  
Assistant Director

Revision a: Revise Condition 6 to allow a lb/hour CO limit when the lb/MMBtu limit is exceeded.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 1064b

Project Summary: The BP Clean Fuels Project is comprised of the construction and operation of a new hydrogen plant (#2 Hydrogen Plant) and new diesel hydro-desulfurization (#3 DHDS) processing unit. The #2 Hydrogen Plant is designed to produce 40 million standard cubic feet per day (MMSCFD) of hydrogen and purify an additional 4 MMSCFD of hydrogen.

The Clean Fuels Project includes retrofitting the existing 1st Stage Fractionator Reboiler at the Hydrocracker Unit with ULNB to reduce nitrogen oxide (NOx) emissions. This separate but related action is being permitted under NWCAA OAC #1067. The Clean Fuels Project requires a Prevention of Significant Deterioration permit (PSD-10-01) for PM10 emissions.

Approved Emission Units:
- One Steam Methane Reformer (SMR) Furnace with a rated heat input capacity of 496 million Btu per hour (MMBtu/hour) higher heating value (HHV). The SMR Furnace is equipped with ultra-low NOx burners (ULNB) and selective catalytic reduction (SCR).
- One elevated flare used to combust off specification gasses during startup, shutdown and upset conditions at the #2 Hydrogen Plant,
- #3 DHDS Charge Heater with a rated heat input capacity of 28 MMBtu/hour HHV. The #3 DHDS Charge Heater is equipped with ULNB.

<table>
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<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
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<tr>
<td>BP Products North America Inc.</td>
<td>BP Cherry Point Refinery</td>
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<td>4519 Grandview Road</td>
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<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
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</tbody>
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Contact: Sahil Patel, Environmental Engineer

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 1064a, issued March 13, 2014.

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)/Maximum Achievable Control Technology Standards (MACT)

- 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

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions1:

#2 Hydrogen Plant SMR Furnace

(1) Heat input to the SMR Furnace shall not exceed 496 MMBtu/hour HHV, based on a 365-day rolling average.

(2) Fuels combusted in the SMR Furnace shall be limited to natural gas and pressure swing adsorption (PSA) residual off-gas.

(3) Visible emissions from the SMR Furnace stack shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Washington State Department of Ecology Method 9A.

(4) Emissions of fine particulate matter (PM$_{2.5}$, filterable and condensable) from the SMR Furnace shall not exceed any of the following limits:

(A) 4.96 lb/hour, and

(B) 0.010 lb/MBtu.

Compliance with this condition shall be demonstrated by conducting source testing within 13 months of the previous source test date. If three consecutive source tests demonstrate emissions are less than the limits in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date.

If a source test demonstrates emissions are greater than the limits in this condition, a retest is required. In addition, source testing frequency shall revert to testing within 13 months of

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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.
the previous source testing date until three consecutive tests demonstrate emissions are less than the limits.

During source testing, the SMR Furnace shall be fired at a rate that is as close to its maximum capacity as practical. If the furnace is fired at a rate that is less than 90% of its maximum capacity, the reason shall be explained in the source test report.

Use the average of three one-hour test runs conducted in accordance with 40 CFR 60 Appendix A, Methods 5 and 202, and NWCAA Section 367 and Appendix A unless an alternative method is approved in advance by the NWCAA. Use measured volumetric stack flows for mass-rate emission limits.

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(C) Firing rate (MMBtu/hr),
(D) NH₃ injection rate (lb/hr),
(E) Natural gas consumption rate (Mscf/hr),
(F) PSA off-gas consumption rate (Mscf/hr),
(G) Exhaust flow rate (Mdscf/hr),
(H) Fuel HHV (Btu/scf) and fuel specific gravity, measured once on the day of the test,
(I) Excess O₂ (%), and,
(J) Exhaust temperature (F).

(5) Emissions of nitrogen oxides (NOₓ) from the SMR Furnace shall not exceed any of the following limits:

During normal operations with SCR,

(A) 3.54 lb/hour, 24-hour rolling average.

During maintenance activities without SCR,

(B) 17.4 lb/hour, 24-hour rolling average.

Continuous compliance with this condition shall be determined by operating a certified continuous emission monitoring system (CEMS) for NOₓ and O₂ stack concentration. The CEMS shall be installed, calibrated, maintained, and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

Stack flows for calculating NOₓ mass emission rates shall be determined as prescribed in Condition 14(b) of this order.

(6) Emissions of carbon monoxide (CO) from the SMR Furnace shall not exceed the following limit:

(A) 4.31 lb/hour, 24-hour rolling average.

Continuous compliance with this condition shall be determined by operating a certified CEMS for CO and O₂ stack concentration. The CEMS shall be installed, calibrated, maintained, and
operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

Stack flows for calculating CO mass emission rates shall be determined as prescribed in Condition 14(b) of this order.

(7) Emissions of sulfur dioxide (SO₂) from the SMR Furnace shall not exceed any of the following limits:

(A) 2.83 lb/hour, 24-hour rolling average, and

(B) 6.3 tons, 12-month rolling cumulative.

Continuous compliance with this condition shall be determined by operating a certified CEMS for SO₂ and O₂ stack concentration. The CEMS shall be installed, calibrated, maintained, and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

Stack flows for calculating SO₂ mass emission rates shall be determined as prescribed in Condition 14(b) of this order.

(8) Emissions of volatile organic compounds (VOC) from the SMR Furnace shall not exceed any of the following limits:

(A) 2.67 lb/hour, and

(B) 0.0054 lb/MMBtu.

Compliance with this condition shall be determined by the average of three test runs conducted during source testing required under Condition 11 of this Order.

(9) Emissions of ammonia (NH₃) from the SMR Furnace shall not exceed any of the following limits:

(A) 10 (1.0 x 10¹) ppm by volume, dry basis, corrected to three percent oxygen, hourly average, and

(B) 2.62 lb/hour.

Compliance with this condition shall be determined by the average of three test runs conducted during source testing utilizing BAAQMD Method ST-1B required under Condition 11 of this Order.

(10) BP shall develop and implement an NH₃ emissions monitoring plan. The plan shall establish a predictive relationship between the SMR Furnace operation, SCR parameters and NH₃ emissions, including a correction factor to be applied to predicted NH₃ slip concentration and calculated as follows:

\[
\text{correction factor} = \frac{\text{measured ammonia slip from source test (ppmvd @ 3\% O₂)}}{\text{calculated ammonia slip (ppmvd @ 3\% O₂)}}
\]
The plan shall define QA/QC procedures and corrective actions to be taken when parameter monitoring indicates that any emission limit in Condition 9 of this Order may be exceeded.

The plan shall be reevaluated after each periodic source test for ammonia and may be improved and revised accordingly. All changes to the plan must be approved in writing by the NWCAA prior to implementation.

As an alternative to a plan based on predictive monitoring of operating parameters, a plan may be developed and/or revised that is based on direct continuous emissions monitoring (CEM) of NH₃ from the SMR Furnace stack.

(11) Compliance with Conditions 8 and 9 of this Order shall be demonstrated by conducting source testing within thirteen months of the previous source test date. If three consecutive source tests for a particular pollutant demonstrate emissions of 50% or less than the respective limit referenced in this condition, source testing frequency for that pollutant may be reduced to once every five years, and within 61 months of the previous source testing date.

If a source test for a particular pollutant demonstrates emissions are greater than 50% of the respective limit referenced in this condition, source testing frequency for that pollutant shall revert to testing within 13 months of the previous source testing date until three consecutive tests demonstrate emissions of 50% or less than the limit.

During source testing, the SMR Furnace shall be fired at a rate that is representative of normal operating conditions at the time of the test.

All testing shall be conducted in accordance with 40 CFR 60 Appendix A and NWCAA Section 367 and Appendix A. Use measured volumetric stack flows for mass-rate emission limits. The following test methods shall be used unless an alternative method is approved in advance by the NWCAA.

VOC – 40 CFR 60 Appendix A, Method 18 or Method 25
NH₃ – BAAQMD Method ST-1B

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) O₂ and NOₓ CEMS data,
(B) Firing rate (MMBtu/hr),
(C) NH₃ injection rate (lb/hr),
(D) Natural gas consumption rate (Mscf/hr),
(E) PSA off-gas consumption rate (Mscf/hr),
(F) Exhaust flow rate (Mdsf/hr),
(G) Fuel HHV (Btu/scf) and fuel specific gravity, measured once on the day of the test,
(H) Excess O₂ (%), and,
(I) Exhaust temperature (F).

(12) SMR Furnace operation without SCR shall not exceed 100 hours, as a cumulative 12-month rolling total.
(13) PSA off-gas combusted in the #2 Hydrogen Plant SMR furnace shall be sampled and analyzed on a weekly basis for composition using UOP Laboratory Test Method 539-97 "Gas Analysis by Gas Chromatography" or equivalent. The gas composition shall be used to determine the heat content of the gas in terms of British Thermal Unit High Heat Value per standard cubic foot (Btu/scf) and to determine the EPA Method 19 $F_D$ factor of the gas. An alternative method to EPA Method 19 can be used to determine the $F_D$ factor with prior approval from the NWCAA.

(14) Maintain the following records for the #2 Hydrogen Plant SMR Furnace. These records shall be maintained for a period of no less than five years from the date of generation and shall be readily available for review by the NWCAA.

(A) Heat input in MMBtu/hour HHV, as daily and 365-day rolling averages.

(B) To demonstrate continuous compliance with the mass emission rate limits in Conditions 5, 6, and 7, exhaust flow rate in dry standard thousand cubic feet per hour (mscf/h), as hourly and 24-hour averages. Exhaust flow rate shall be determined using 40 CFR Part 60 Appendix A, Method 19, or an alternative method, with prior approval from the NWCAA. The stack flow rate shall reflect the proportions of natural gas and PSA off-gas in the SMR Furnace fuel as determined by continuous monitoring of natural gas and PSA off-gas feed to the main burners and pilots according to 40 CFR 60.13(e). For recordkeeping and compliance purposes, the monthly average PSA off-gas $F_D$ results from Condition 13 of this order shall be used to determine the PSA off-gas contribution to the stack flow. The $F_D$ for natural gas from 40 CFR 60 Appendix A Table 19-2 shall be used to determine the contribution of natural gas to the total stack flow.

(C) NO$_X$, CO, and SO$_2$ emissions from CEMS data in ppmvd at 3% oxygen, as hourly and 24-hour averages,

(D) NO$_X$, CO, and SO$_2$ emissions from CEMS data in lb/hour, as hourly and 24-hour averages,

(E) SO$_2$ emissions in cumulative tons per month, and 12-month rolling total,

(F) Results of monitoring for NH$_3$ conducted in compliance with Condition 10,

(G) Time, date, and duration of each event that the SMR Furnace is operated without SCR. The record shall describe the reason that the SCR system was not operated, and

(H) Number of hours that the SMR Furnace is operated without SCR, as a cumulative 12-month rolling total.

#2 Hydrogen Plant Flare

(15) The #2 Hydrogen Plant Flare pilot fuel and header sweep gas shall be limited to natural gas.

(16) Visible emissions from #2 Hydrogen Plant Flare shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Washington State Department of Ecology Method 9A.

(17) The gas flow rate to the #2 Hydrogen Plant Flare shall be continuously monitored using a flow meter compensated for pressure and temperature. The flow meter shall be used to
determine the volumetric flow in standard cubic feet per minute (scfm) of gasses routed to the flare.

(18) Maintain records of the flow rate in scfm of gas combusted (as an hourly average) for the #2 Hydrogen Plant Flare. These records shall be maintained for a period of no less than five years from the date of generation and shall be readily available for review by the NWCAA.

**#3 DHDS Unit Charge Heater**

(19) Fuels combusted in the #3 DHDS Charge Heater shall be limited to natural gas and refinery fuel gas.

(20) Heat input to the #3 DHDS Charge Heater shall not exceed 28 MMBtu/hour HHV, based on a 365-day rolling average.

(21) Visible emissions from the #3 DHDS Charge Heater shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Washington State Department of Ecology Method 9A.

(22) The hydrogen sulfide (H₂S) content of fuel combusted in the #3 DHDS Charge Heater shall not exceed the following limit:

(A) 50 $(5.0 \times 10^1)$ ppm, 24-hour rolling average.

The refinery fuel gas combusted in the #3 DHDS Charge Heater shall be continuously monitored for H₂S content. The monitor shall be installed, and operated in accordance with 40 CFR 60 Subpart J, Subpart A and Appendix F, and NWCAA Section 367 and Appendix A.

(23) Emissions of PM$_{2.5}$, filterable and condensable from the #3 DHDS Charge Heater shall not exceed any of the following limits:

(A) 0.28 lb/hour, and

(B) 0.010 lb/MBtu.

Compliance with this condition shall be determined by the average of three test runs conducted during periodic source testing required under Condition 27 of this Order.

(24) Emissions of NOₓ from the #3 DHDS Charge Heater shall not exceed any of the following limits:

(A) 0.98 lb/hour, and

(B) 0.035 lb/MBtu.

Compliance with this condition shall be determined by the average of three test runs conducted during periodic source testing required under Condition 27 of this Order.
(25) Emissions of CO from the #3 DHDS Charge Heater shall not exceed any of the following limits:

(A) 1.03 lb/hour, and

(B) 0.037 lb/MMBtu.

Compliance with this condition shall be determined by the average of three test runs conducted during periodic source testing required under Condition 27 of this Order.

(26) Emissions of SO2 from the #3 DHDS Charge Heater shall not exceed any of the following emission limits:

(A) 3.04 lb/hour,

(B) 0.11 lb/MMBtu, and

(C) 3.2 tons, 12-month rolling total.

Continuous compliance with this condition shall be determined by installing, certifying, calibrating, maintaining, and operating a CEMS to measure and record the total sulfur (TS) content of fuel gas combusted in the #3 DHDS Charge Heater. The CEMS must meet appropriate performance specification and data quality assurance procedures as approved by NWCAA in writing, NWCAA Section 367, and NWCAA Appendix A.

Assume 100% conversion of TS in fuel gas to SO2 at the #3 DHDS Charge Heater stack after combustion unless an alternative methodology is approved in writing by NWCAA.

(27) Compliance with Conditions 23, 24, and 25 of this Order shall be demonstrated by conducting source testing within 37 months of the most recent test. During source testing, the #3 DHDS Charge Heater shall be fired at a rate that is as close to its maximum capacity as practical. If the heater is fired at a rate that is less than 90% of its maximum capacity, the reason shall be explained in the source test report.

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

PM$_{2.5}$ - 40 CFR 60 Appendix A, Method 5 and Method 202

NOx - 40 CFR 60 Appendix A, Method 7E

CO - 40 CFR 60 Appendix A, Method 10

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) Firing rate (MMBtu/hr),

(B) Fuel flow rate (Mscf/hr), and

(C) Fuel HHV (Btu/scf), sampled once on the day of the test.

(28) An operating and maintenance (O & M) manual for the #3 DHDS Charge Heater ultra-low NOx burners shall be maintained on site.
(29) The owner/operator shall maintain the following records for the #3 DHDS Charge Heater. These records shall be maintained for a period of no less than five years from the date of generation and shall be readily available for review by the NWCAA.

(A) Heat input in MMBtu/hour HHV, as daily and 365-day rolling averages.

(B) SO$_2$ emissions from the heater in cumulative tons per each 12-month rolling period.

On September 15, 2010, NWCAA, as lead agency under the State Environmental Policy Act Chapter 43.21C RCW (SEPA), issued a Mitigated Determination of Non-Significance (MDNS) for the project, based on the following requirements as conditions of approval imposed pursuant to SEPA Substantive Authority under RCW 43.21C.060 and NWCAA Regulation Sections 155.8 and 155.13. These conditions, which are enforceable under subsection G of NWCAA Regulation Section 155.8, subsection B of NWCAA Regulation Section 155.13, and the procedures of NWCAA Regulation Section 100, are necessary to mitigate specific probable adverse environmental impacts identified in the environmental documents prepared by NWCAA, are reasonable and capable of being accomplished; and are based on one or more policies in subsections (D) through (F) of Section 155.13, and are hereby cited as a condition of approval in this OAC. These conditions are not NSR approval conditions under NWCAA Regulation Section 300, RCW 70A.15.2210, the federal Clean Air Act, or the Washington State Implementation Plan.

Mitigated Determination of Nonsignificance Terms and Conditions

(30) AIR

The energy efficiency and conservation measures set forth in the SEPA checklist shall be incorporated into the design and operation of the equipment such that the annual carbon dioxide emissions from the #2 Hydrogen Plant SMR Furnace stack shall not exceed 437,132 metric tons per cumulative 12-month rolling period. This limit is applicable only to the #2 Hydrogen Plant and includes the combination of the industrial process emissions generated from steam methane reforming and from products of combustion in the furnace. Ongoing compliance with this limit shall be demonstrated by installing and operating a continuous emission monitoring system (CEMS) for CO$_2$ in the stack. The CEMS shall be maintained and operated in accordance with the federal rule entitled Mandatory Reporting of Greenhouse Gases (40 CFR 98). The cumulative 12-month rolling CO$_2$ emissions from the #2 Hydrogen SMR Furnace stack shall be reported to the NWCAA in monthly emissions reports.

(31) Energy and Natural Resources

Potential impacts to energy and natural resources are mitigated in accordance with Condition 30 (Air) of this Order.

(32) Aesthetics

It is recognized that the project site and surrounding areas are zoned for industrial use and development; however, the applicant shall maintain the existing 100-foot setback/buffer (inclusive of a 20-foot cleared) security setback along the perimeter fence line on Grandview Road to help visually screen the Clean Fuels Project site from non-refinery users off-site. Existing trees and vegetation within the setback/buffer area shall be maintained to the maximum extent practicable to help minimize visual impacts.
(33) Light and Glare

The applicant shall prepare a lighting plan for the Clean Fuels Project to ensure that lighting is designed and installed in accordance with standard technical practices, taking into consideration operator safety and functionality. Where feasible, exterior lighting shall generally be constructed and/or screened in a manner so as to minimize potential off-site impacts from light or glare. Adjustment of light direction and/or use of supplemental light shields to provide additional screening may be used to minimize potential light spillover or direct glare in response to specific site conditions.

Revision a: Address administrative changes; remove inapplicable requirements (construction and start-up requirements); remove the stack velocity meter on the #2 Hydrogen SMR stack and conduct Method 19 calculations instead; remove velocity, Btu content, and Method 19 Fd ongoing determinations for #2 Hydrogen Flare.

Revision b: Remove obsolete conditions. Reduce NH₃, PM, and VOC source testing frequency at the #2 H₂ SMR Furnace. Clarify source test reporting parameters. Require inclusion of an NH₃ slip correction factor in the monitoring plan and approval of the plan prior to implementing changes. Replace monthly fuel gas grab sampling at the #3 DHDS Charge Heater fuel gas system with a TS CEMS.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #1054

Project Summary: Original construction of the Cherry Point Refinery including process heaters, boilers and a sulfur recovery complex.

Approved Emission Units:
- Crude Heater (10-1401)
- South Vacuum Heater (10-1451)
- North Coker Charge Heater (12-1401-01)
- South Coker Charge Heater (12-1401-02)
- Naphtha HDS Charge Heater (11-1401)
- Naphtha HDS Stripper Reboiler (11-1402)
- #1 Reformer Heater (11-1403, 4, 5, 6)
- #1 Diesel HDS Charge Heater (13-1401)
- #1 Diesel HDS Stablizer (13-1402)
- #1 Hydrogen Plant North Reforming Furnace (14-1401-01)
- #1 Hydrogen Plant South Reforming Furnace (14-1401-02)
- Hydrocracker 1st Stage Reactor Heater, (R-1) (15-1401)
- Hydrocracker 2nd Stage Reactor Heater (R-4) (15-1402)
- Hydrocracker 1st Stage Fractionator Reboiler (15-1451)
- Hydrocracker 2nd Stage Fractionator Reboiler (15-1452)
- Sulfur Recovery Complex Incinerator (17-1481)

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Valerie Lagen

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery
4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes the NWCAA Order of Approval to Construct for “Cherry Point Refinery Sulfur Recovery Plant and Certain Heaters and Furnaces” dated June 8, 1970.
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**
- 40 CFR Part 60 Subpart J - Standards of Performance for Petroleum Refineries

**National Emission Standards for Hazardous Air Pollutants (NESHAP)**

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

1. The Crude Heater and South Vacuum Heater shall combusdt gaseous fuel, or a combination of gaseous and liquid fuel where the percentage of liquid fuel combusted in each heater does not exceed 75% by weight. Fuel combusted in each heater shall not exceed 2.0% by weight sulfur.

2. The North Coker Charge Heater and South North Coker Charge Heater shall combusdt gaseous fuel, or a combination of gaseous and liquid fuel where the percentage of liquid fuel combusted in each heater does not exceed 75% by weight. Fuel combusted in each heater shall not exceed 1.2% by weight sulfur.

3. Naphtha HDS Charge Heater, Naphtha HDS Stripper Reboiler, #1 Reformer Heater, #1 Diesel HDS Charge Heater, #1 Diesel HDS Stabilizer, #1 Hydrogen Plant North Reforming Furnace, #1 Hydrogen Plant South Reforming Furnace, Hydrocracker 1st Stage Reactor Heater (R-1), Hydrocracker 2nd Stage Reactor Heater (R-4), Hydrocracker 1st Stage Fractionator Reboiler, and Hydrocracker 2nd Stage Fractionator Reboiler shall combusdt gaseous fuel only.

4. Supplemental fuel combusted in the Sulfur Recovery Complex Incinerator shall be gaseous fuel only.

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Daniel A. Mahar, P.E.  
Environmental Engineer

Mark Buford, P.E.  
Assistant Director

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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.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #1043

**Project Summary:** Upgrade the sour water handling capacity of the Sour Water Unit. Modifications to the Sour Water Unit include adding a new flash drum and replacing internal components in the non-phenolic stripper tower. The project is designed to improve safety and process unit reliability at the refinery.

**APPLICANT**

- Tim J. Clossey
- Production Manager
- BP Cherry Point Refinery
- 4519 Grandview Road
- Blaine, WA 98230

**OWNER**

- BP West Coast Products, LLC
- BP Cherry Point Refinery
- 4519 Grandview Road
- Blaine, WA 98230

**FACILITY LOCATION:**

4519 Grandview Road, Blaine, Washington 98230

Best Available Control Technology (BACT) for this project has been determined to be:

- For volatile organic compounds and toxic air pollutants, BACT is equivalent to the leak detection and repair requirements of 40 CFR 60 Subparts GGGa and VVa.

Note that in addition to other applicable rules and regulations, the Sour Water Unit is subject to applicable portions of the following federal regulations:

**New Source Performance Standards (NSPS)**

- 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 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 CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. Notwithstanding the 40 CFR 63 Subpart CC overlap provision of §63.640(p), a leak detection and repair (LDAR) program that conforms with the requirements of 40 CFR 60 Subpart GGGa and Subpart VVa (as referenced by Subpart GGGa), shall be conducted at the Sour Water Unit

2. A written notice of completion of the sour water handling upgrade project shall be submitted to the NWCAA and postmarked within 15 days after completion of the project.

Dan Mahar, P.E.  Mark Buford, P.E.  Lynn Billington, P.E.
Environmental Engineer  Assistant Director, Engineering  Director, Engineering
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1001e

**Project Summary:** Replace utility Boilers #1 and #3, each rated at 330 MMBtu/hr higher heating value (HHV) capacity, with utility Boilers #6 and #7, each rated at 363 MMBtu/hr HHV capacity. The new boilers will include selective catalytic reduction (SCR) to control nitrogen oxides (NO\textsubscript{x}).

**Approved Emission Units:**
- Two 363 MMBtu/hr HHV capacity boilers (#6 and #7) with SCR for NO\textsubscript{x} control.

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**Permit History**
- As of the date of issuance, this Order supersedes NWCAA OAC 1001d, issued May December 22, 2021.

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 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)/Maximum Achievable Control Technology Standards (MACT)**
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

(1) Fuel combusted in the boilers shall be limited to refinery fuel gas or natural gas.

(2) Visual emissions from the boilers shall not exceed five percent opacity for more than three minutes in any 60-minute period as determined by Washington Department of Ecology Method 9A.

(3) NOx emissions shall not exceed the following emission limits:

(A) During periods of normal operation, defined as firing the boiler at or above 18 MMBtu HHV/hour, 4.0 lb/hr based on a one-hour average.

(B) During periods of hot standby, defined as firing the boiler below 18 MMBtu HHV/hour, 2.0 lb/hr based on a one-hour average.

(4) Compliance with Condition (3) shall be determined by installing NOx and oxygen continuous emission monitors (CEM) in each boiler stack. The CEM shall be calibrated, maintained and operated in accordance with NWCAA Appendix A: Ambient Monitoring, Emission Testing, and Continuous Emission and Opacity Monitoring and 40 CFR Part 60 Appendices B and F.

(5) The HHV heat input to each boiler shall be continuously recorded on the basis of hourly averages.

(6) Emissions of ammonia from each boiler shall not exceed 10.0 ppmvd corrected to 3% oxygen as a 24-hour average.

Compliance shall be determined by Bay Area Air Quality Management District Source Test Procedure #1B (BAAQMD ST-1B) by the average of three 60-minute test runs or an alternative method approved in advance by the NWCAA.

Compliance with this condition shall be determined by conducting source testing within 13 months of the previous source test date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date.

If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency shall revert to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit.

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.
Conduct source testing while firing the boilers at a load that is representative of normal operations at the time of the test. Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) O₂ and NO₂ CEMS data,
(B) Firing rate (MMBtu/hr),
(C) NH₃ feed rate (lb/hr),
(D) Fuel consumption rate (scf/hr),
(E) Steam production (1000-lb/hr),
(F) Fuel gas HHV (Btu/scf) and fuel gas specific gravity, sampled once on the day of the test, and,
(G) Exhaust temperature (F).

(7) BP shall develop and implement an Ammonia Emissions Monitoring Plan to establish a predictive relationship between boiler and SCR parameters and emissions of ammonia, including a correction factor to be applied to predicted ammonia slip concentration and calculated as follows:

\[
\text{correction factor} = \frac{\text{measured ammonia slip from source test (ppmvd @ 3\% O₂)}}{\text{calculated ammonia slip (ppmvd @ 3\% O₂)}}
\]

This plan shall define QA/QC procedures and corrective actions when parameter monitoring indicates the emission limit in Condition (6) may be exceeded. The acceptability of the plan shall be assessed based on source test results and may be amended and improved accordingly. All changes to the plan must be approved in writing by the NWCAA prior to implementation. Maintain a copy of all written approvals with the plan.

(8) Utilize the following leak definition for new valves associated with this project that have the potential to leak volatile organic compounds or hazardous air pollutants, unless otherwise required to use a lower leak definition:

500 ppm for valves

Record, track, repair, and remonitor within 30 days all leaks greater than the leak definition in this Condition and less than the regulatory leak definition of the applicable portion of 40 CFR 63 Subpart CC for new sources.
Revision a: Correct a typo in Condition 10.

Revision b: Clarify 40 CFR 60 Subpart Ja applicability. Revise Condition 3 to express emission limits in terms of lb/hour instead of ppm and remove limit on the SCR inlet temperature. Revise Condition 6 by adding an exception for cold starts associated with unavoidable maintenance and malfunctions.

Revision c: Replace limit on hours of operation during boiler transition between 18 and 90 MMBtu/hr in Condition 5 with a lb/hr limit in Condition 3a and delete Condition 5. Clarify 40 CFR 63 Subpart DDDD applicability. Modify testing to allow testing below 90% boiler load. Remove requirement for annual tests to be within 1 month of anniversary of pervious test. Delete cold start-up limit.

Revision d: Remove obsolete conditions. Reduce ammonia source testing frequency and remove the multi-load testing requirement. Clarify source test reporting parameters. Require inclusion of an ammonia slip correction factor in the monitoring plan and approval of the plan prior to implementing changes.

Revision e: Clarify source test reporting requirements. Align LDAR program requirements with BACT determination, which is compliance with 40 CFR 60 Subpart GGGa.
Northwest Clean Air Agency (NWCAA) hereby issues  
Order of Approval to Construct (OAC) 985c

Project Summary: Project involves replacing all six of the original 4,362 ft² “old” cells in the #3 Calciner Wet Electrostatic Precipitator (WESP) with three 11,652 ft² “new” cells. The project is scheduled to be completed in 2009 with the net effect of increasing the total collection area of the WESP from 26,172 to 34,956 ft².

Approved Emission Units:
- #3 Calciner and associated WESP.

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<td>Contact: Sahil Patel, Environmental Engineer</td>
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Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 985b, issued July 6, 2021.

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

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:  

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.
Emission limits

(1) Sulfuric acid mist (H₂SO₄) shall not exceed any of the following emission limits:
   (A) 50 \( (5.0 \times 10^1) \text{ mg/dscm} \), 60-minute rolling average, corrected to seven percent oxygen (O₂) and,
   (B) 18.3 \( (1.83 \times 10^1) \text{ lb/hour} \), 60-minute rolling average.

(2) Fine particulate matter (PM₁₀) shall not exceed 0.010 \( (1.0 \times 10^{-2}) \text{ grains per dry standard cubic foot corrected to seven percent O₂} \), 60-minute rolling average.

(3) Visual emissions shall not exceed an average of 20% opacity for more than six consecutive minutes as determined by EPA Method 9.

WESP Operating Limits

(4) All “old cells” shall be operated with a secondary voltage greater than 40 KV DC and secondary current greater than 50 milliamps DC.

(5) All “new cells” shall be operated with a secondary voltage greater than 35 KV and secondary current greater than 300 milliamps.

(6) The WESP shall be operated with the maximum available Specific Collection Area (SCA). In no case shall the WESP be operated with a SCA of less than 126 ft²/1,000 acfm, 60-minute rolling average. For the purpose of monitoring for compliance with this condition, the SCA shall be calculated as follows.

\[
\text{SCA (ft²/1,000 acfm)} = \frac{\text{Square feet of the total collection area of operating cells}}{\text{actual cubic feet per minute (acfm) of stack flow}}
\]

Where, the total collection area of the operating cells does not include cells that are in flush mode, and,

Where, stack flow is actual flow as predicted from calcined coke production rates.

BP shall keep a record of the basis for these calculations and have them readily available for review by the NWCAA.

Monitoring and Recordkeeping

(7) Whenever the #3 Calciner Hearth is operating in normal, startup, shutdown, or hot standby mode, the following parameters shall be monitored and recorded:

   (A) Operational mode of the #3 Hearth (normal, startup, shutdown, or hot standby),
   (B) #3 Hearth calcined coke production rate (tons/hour),
   (C) Predicted actual WESP stack flow (acfm),
   (D) Specific Collection Area (ft²/1,000 acfm), and,

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.
(E) Secondary voltages and secondary currents for each operating WESP cell (kV and milliamps).

(8) Data shall be collected and recorded on intervals of not less than once every ten minutes.

(9) Records required by this condition shall be kept for a period of no less than five years.

Monitoring and Recordkeeping

(10) Compliance with Conditions (1) and (2) shall be determined by conducting source testing within 13 months of the previous source testing date. If three consecutive source tests for a particular pollutant demonstrate emissions of 50% or less than the respective limit, source testing frequency for that pollutant may be reduced to once every two years, and within 25 months of the previous source testing date. If a source test for a particular pollutant demonstrates emissions are greater than 50% of the respective limit, source testing frequency for that pollutant shall revert back to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit.

Testing shall be conducted, and plans and test results submitted in accordance with NWCAA Section 367, NWCAA Appendix A and the appropriate test methods listed below.

(A) PM/PM10 – 40 CFR 60 appendix A, Test Methods 5 and 202
(B) H2SO4 – 40 CFR 60 appendix A, Test Method 8, Conditional Test Method 13, or other test method approved in advance by the NWCAA.

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(C) Calcined coke production rate (STPH),
(D) WESP operating configuration and operational mode, recorded once for each test run,
(E) Predicted or measured actual WESP stack flow (acfm),
(F) WESP secondary voltages and currents (kV and mA, 1-hour average), and,
(G) Specific Collection Area (ft²/1,000 acfm).

_________________________________________  _________________________________________
Robyn Jones, E.I.T.                           Agata McIntyre, P.E.
Environmental Engineer                       Engineering Manager

Revision a: Correct typo in Condition 1.b. and add language to Condition 10.b. that allows an alternative test method for H2SO4 if approved in advance by the NWCAA.

Revision b: Reformat for AOP cleanup. Reduce Calciner Stack #2 H2SO4 and PM10 source testing frequency from annual to once every two years after three consecutive years of results that are
50% or less than the applicable limit. Clarify source test reporting requirements. Remove obsolete conditions.

Revision c: Addition of an oxygen correction to the H₂SO₄ concentration-based limit.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 977a

Project Summary: Install and operate a recycle gas dryer at the #1 Reformer unit. The dryer will increase utilization of the #1 Reformer by shortening the recycle gas drying time following catalyst regeneration.

Approved Emission Units:
- Components in volatile organic compound (VOC) or organic hazardous air pollutant (HAP) service installed as part of this project.

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<td>Contact: Ryan O’Larey</td>
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Permit History:
- As of the date of issuance, this Order supersedes NWCAA OAC 977 issued January 22, 2007.

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

New Source Performance Standards (NSPS)
- 40 CFR 60 Subpart A - General Provisions

National Emission Standards for Hazardous Air Pollutants (NESHAP)
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

1. In addition to the requirements of 40 CFR 60 Subpart GGG, the following provisions are in effect for valves and pumps that have the potential to leak VOC or organic HAP installed as part of this project.

   a. Utilize the following leak definitions:
      
      i. 500 ppm for block valves and control valves.

   b. Record, track, repair, and re-monitor all leaks greater than the leak definitions in Condition (1)a of this Order. BP will have thirty (30) days to make repairs on and re-monitor leaks that are greater than the leak definitions in Condition (1)a of this Order and less than the applicable 40 CFR 60 Subpart GGG leak definition.

   c. For monitoring instrument calibration, use 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 calibrate the lower scale with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and calibrate the highest scale 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. Perform a calibration drift assessment, 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 40 CFR Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. 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.

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.
e. Record the instrument reading for each scale used to comply with Condition (1)c, including:

i. Date of calibration and initials of operator performing the calibration.

ii. Calibration gas cylinder identification, certification date, and certified concentration.

iii. Instrument scale(s) used.

iv. A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of 40 CFR Part 60.

v. Results of each calibration drift assessment required by Condition (1)d.

vi. If an owner or operator makes their own calibration gas, a description of the procedure used.

[Signatures]
Robyn Jones, E.I.T.
Environmental Engineer

Agata McIntyre, P.E.
Engineering Manager

Revision a: Clarify LDAR program requirements in Condition (1). Update condition formatting to plain language.
Northwest Clean Air Agency (NWCAA) hereby issues 
Order of Approval to Construct (OAC) 966d

Project Summary: Retrofit the Hydrocracker 1st Stage Reactor Heater (R-1 Heater) with ultra-low nitrogen oxide (NOx) burners (ULNB) with a design performance of 0.040 lb NOx/MMBtu, higher heating value (HHV). Install a new coalescer drum to improve the quality of refinery fuel gas combusted in the heater. NOx reductions from this ULNB retrofit project will be used to meet the NOx reduction obligations of the BP 2001 Consent Decree.

Approved Emission Units:
- R-1 Heater with a heat input capacity of 120.9 MMBtu/hour HHV equipped with ULNB.
- Components in volatile organic compound (VOC) or organic hazardous air pollutant (HAP) service installed as part of this project.

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<td>Engineer</td>
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Permit History:
- As of the date of issuance, this Order supersedes NWCAA OAC 966c issued April 26, 2018.

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
- 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)
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

1. Limit fuel combusted in the R-1 Heater to natural gas and refinery fuel gas.

2. Heat input to the R-1 Heater shall not exceed 120.9 MMBtu/hour calculated using fuel gas HHV over a 30-day rolling average.

3. Visual emissions from the R-1 Heater stack shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Department of Ecology Method 9A.

4. Emissions of nitrogen oxides \( \text{NO}_x \) from the R-1 Heater shall not exceed the following limit:
   
   - **A** 26 ppmvd, corrected to seven percent oxygen \( \text{O}_2 \), based on a 24-hour rolling average.
   
   If this concentration based limit is exceeded, demonstrate compliance by meeting the following mass emission rate limit:

   - **B** 4.9 lb/hour, based on a 24-hour rolling average.

   Demonstrate compliance with this condition by installing, calibrating, maintaining, and operating a continuous emission monitor (CEM) to measure \( \text{NO}_x \) and \( \text{O}_2 \). The monitor must meet the appropriate requirements of 40 CFR 60 Subpart J, 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.

5. Emissions of carbon monoxide \( \text{CO} \) from the R-1 Heater shall not exceed 5.4 lb/hour.

   Demonstrate compliance with this condition by conducting an annual source test within 13 months of the previous source testing date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency must revert back to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit.

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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.
Use the average of three test runs executed in accordance with test methods 1, 2, 3A, 4, and 10 of 40 CFR 60 Appendix A, NWCAA Section 367, and NWCAA Appendix A. NWCAA must approve any proposed alternative test methods in advance.

Conduct source testing while firing the heater at a load that is representative of normal operations at the time of the test. Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include it in the performance test report:

(A) Fuel flow, in Mscf/h,
(B) Fuel gas specific gravity and HHV in Btu/scf, sampled once on the day of the test,
(C) Firing rate, in MMBtu/hr, and,
(D) Stack flow rate, in dry Mscf/hr.

Demonstrate continuous compliance with this condition by using the lb/MMBtu emission factor generated during the most recent performance test and actual MMBtu/hour firing rates of the heater.

(6) Keep an operation and maintenance (O&M) manual on site for the R-1 Heater that includes information on the O&M of the ULNB.

(7) Maintain the following records for the R-1 Heater for at least five years from date of generation, and readily available for review by NWCAA:

(A) Heat input in MMBtu/hour HHV, as hourly, daily, and 30-day rolling averages,
(B) NOx emissions from CEM data in ppmvd corrected to seven percent O2, as hourly and 24-hour averages,
(C) NOx emissions from CEM data in lb/hour, as hourly and 24-hour averages, and,
(D) CO emissions in lb/hour.

(8) In addition to the requirements of 40 CFR 63 subpart CC, the following provisions are in effect for valves that have the potential to leak VOC or organic HAP installed in support of this project.

(A) Utilize the following leak definition:

   (i) 500 ppm for block valves and control valves.

(B) Record, track, repair, and re-monitor all leaks greater than the leak definition in Condition (8)(A) of this Order. BP will have 30 days to make repairs on and re-monitor leaks that are greater than the leak definitions in Condition (8)(A) of this Order and less than the applicable regulatory leak definition of 40 CFR 63 Subpart CC.

(C) For monitoring instrument calibration, use 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 calibrate the lower scale with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and calibrate the highest scale 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) Perform a calibration drift assessment, 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 40 CFR Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. 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.

(E) Record the instrument reading for each scale used to comply with Condition (8)(C), including:

(i) Date of calibration and initials of operator performing the calibration,
(ii) Calibration gas cylinder identification, certification date, and certified concentration,
(iii) Instrument scale(s) used,
(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of 40 CFR Part 60,
(v) Results of each calibration drift assessment required by Condition (8)(D), and,
(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

Robyn Jones, E.I.T.
Environmental Engineer

Agata McIntyre, P.E.
Engineering Manager

Revision a: Corrected the EPA test method for CO.

Revision b: Add a firing rate limit, increase mass emission limit for NOx, add an ongoing compliance method for CO, and add recordkeeping requirements. Removal of initial source testing deadlines and initial startup notification.

Revision c: Clarify LDAR program requirements in Condition (8). Update condition formatting to plain language.

Revision d: Clarify NOx emission limits. Reduce CO source testing frequency. Clarify source test reporting requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 949c

Project Summary: The #1 Diesel Hydrodesulfurization Unit (#1 DHDS) Heater Reliability Project involves retrofitting the Charge Heater (47.8 MMBtu/hour HHV design firing capacity) and Stabilizer Reboiler (55.6 MMBtu/hour HHV design firing capacity) with ultra-low nitrogen oxide (NOx) burners (ULNB). There will be no design firing capacity increases as a result of this project. The new burners are designed to meet emissions rates of 0.040 lb NOx/MMBtu HHV and 0.068 lb CO/MMBtu HHV. Modifications to the Charge Heater and Stabilizer Reboiler are being used to meet the NOx reduction requirements of the BP 2001 consent decree.

Approved Emission Units:
- One charge heater within the #1 DHDS Unit, with a firing capacity of 47.8 MMBtu/hour HHV.
- One Stabilizer Reboiler within the #1 DHDS Unit, with a firing capacity of 55.6 MMBtu/hour HHV.
- Components in volatile organic compound (VOC) or organic hazardous air pollutant (HAP) service installed as part of this project.

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP Products North America Inc.</td>
<td>BP Cherry Point Refinery</td>
</tr>
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<td>BP Cherry Point Refinery</td>
<td>4519 Grandview Road Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Sahil Patel, Environmental Engineer</td>
<td></td>
</tr>
</tbody>
</table>

Permit History:
- As of the date of issuance, this Order supersedes NWCAA OAC 949b issued April 26, 2018.

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)
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

(1) Limit fuel combusted in the #1 DHDS Charge Heater and Stabilizer Reboiler to pipeline grade natural gas and refinery fuel gas.

(2) Visual emissions from the #1 DHDS Charge Heater and Stabilizer Reboiler stacks shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Department of Ecology Method 9A.

(3) Emissions of nitrogen oxides (NOₓ) from the #1 DHDS Charge Heater shall not exceed the following limit:

   (A) 0.040 lb/MMBtu, based on a 24-hour rolling average.

   If the performance based limit in Condition (3)(A) is exceeded, demonstrate compliance with this condition by meeting the following mass emission rate limit:

   (B) 1.9 lb/hour, based on a 24-hour rolling average.

   Demonstrate compliance with this condition by installing, calibrating, maintaining, and operating a continuous emission monitor (CEM) to measure NOₓ and oxygen in the stack. Each monitor must meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.

(4) Emissions of carbon monoxide (CO) from the #1 DHDS Charge Heater shall not exceed 3.2 lb/hour.

Demonstrate compliance with this condition by conducting a source test for CO at least once every three years, and within 37 months of the previous source testing date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency must revert back to once every three years until three consecutive tests demonstrate emissions of 50% or less than the limit.

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.
Use the average of three test runs executed in accordance with test methods 1, 2, 3A, 4, and 10 of 40 CFR 60 Appendix A, NWCAA Section 367, and NWCAA Appendix A. NWCAA must approve any proposed alternative test methods in advance.

Conduct source testing while firing the heater at a load that is representative of normal operations at the time of the test. Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include it in the performance test report:

(A) Fuel flow, in Mscf/h,
(B) Fuel gas HHV in Btu/scf, sampled once on the day of the test,
(C) Firing rate, in MMBtu/hr, and,
(D) Stack flow rate, in dry Mscf/hr.

(5) Emissions of NOx from the #1 DHDS Stabilizer Reboiler shall not exceed the following limit:

(A) 26 ppmvd, corrected to 7% oxygen, based on a 24-hour rolling average.

If the limit in Condition (5)(A) is exceeded, demonstrate compliance with this condition by meeting the following mass emission rate limit:

(B) 2.2 lb/hour, based on a 24-hour rolling average.

Demonstrate compliance with this condition by installing, calibrating, maintaining, and operating a CEM to measure NOx and oxygen in the stack. Each monitor must meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.

(6) Emissions of CO from the #1 DHDS Stabilizer Reboiler shall not exceed 3.8 lb/hour.

Demonstrate compliance with this condition by conducting a performance test for CO at least once every three years, and within 37 months of the previous source testing date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency must revert back to once every three years until three consecutive tests demonstrate emissions of 50% or less than the limit. Use test methods 1 through 4 of 40 CFR 60 Appendix A in conjunction 40 CFR 60 Appendix A, Method 10. NWCAA must approve any proposed alternative test methods in advance. Conduct the test in accordance with NWCAA Section 367 and NWCAA Appendix A.

Conduct source testing while firing the reboiler at a load that is representative of normal operations at the time of the test. Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include it in the performance test report:

(A) Fuel flow, in Mscf/h,
(B) Fuel gas HHV in Btu/scf, sampled once on the day of the test,
(C) Firing rate, in MMBtu/hr, and,
(D) Stack flow rate, in dry Mscf/hr.

(7) Keep an operation and maintenance (O&M) manual on site for the #1 DHDS Charge Heater and Stabilizer Reboiler that includes information on the O&M of the ULNB.

(8) In addition to the requirements of 40 CFR 63 Subpart CC, the following provisions are in effect for new valves associated with the #1 DHDS Heater Reliability Project that have the potential to leak VOC or organic HAP.

(A) Utilize the following leak definition:

(i) 500 ppm for block valves and control valves.

(B) Record, track, repair, and re-monitor all leaks greater than the leak definitions in Condition (8)(A) of this Order. BP will have 30 days to make repairs on and re-monitor leaks that are greater than the leak definitions in Condition (8)(A) of this Order and less than the applicable 40 CFR 60 Subpart CC leak definition.

(C) For monitoring instrument calibration, use 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 calibrate the lower scale with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and calibrate the highest scale 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) Perform a calibration drift assessment, 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 40 CFR Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. 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.

(E) Record the instrument reading for each scale used to comply with Condition (8)(C), including:

(i) Date of calibration and initials of operator performing the calibration,
(ii) Calibration gas cylinder identification, certification date, and certified concentration,
(iii) Instrument scale(s) used,
(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of 40 CFR Part 60,
(v) Results of each calibration drift assessment required by Condition (8)(D), and,
(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

Revision a: Revise Condition 3 to allow compliance to be determined by a CEM. Remove the CO lb/MMBtu emission limit of Condition 4. Remove the one-time initial source test requirement from Condition 5. Remove the one-time startup notification from Condition 10. Revise Conditions 4, 6, 7, and 10 to allow source testing at firing rates representative of normal operations, and include a requirement to conduct additional source testing within 90 days if the 720-hour rolling average firing rate exceeds by more than 20% the firing rate recorded during the most recent test.

Revision b: Clarify LDAR program requirements in Condition (8). Update condition formatting to plain language.

Revision c: Remove obsolete requirements. Remove 720-hr rolling firing rate source testing triggers. Reduce CO source testing frequency. Clarify source test reporting requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #902a

Project Summary: South Vacuum Heater Improvement Project which includes retrofiting the existing South Vacuum Heater with an ultra-low NOx burner (ULNB).

APPLICANT
Rick Porter
Business Unit Leader
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
4519 Grandview Road, Blaine, Washington
NWCAA ID: 011-V-W

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

1. Fuel combusted in the South Vacuum Heater shall be limited to pipeline grade natural gas and refinery fuel gas.

2. Visual emissions from the South Vacuum Heater stack shall not exceed five (5%) percent opacity for more than three minutes in any consecutive sixty-minute period as determined by Department of Ecology Method 9A.

3. Nitrogen oxides (NOx) from South Vacuum Heater shall not exceed the following emission limit.
   a. 10.5 lb/hour based on a calendar day average

Compliance with this condition shall be determined by a continuous emission monitor (CEM) installed, calibrated, maintained, and operated to measure nitrogen oxides and oxygen in the stack. Each monitor shall meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 366 and NWCAA Appendix A.

Hourly lb/hour emission rates for NOx shall be recorded. On-site documentation shall be kept showing the method for calculating the mass emission rate based on associated CEM data.
4. Carbon monoxide from the South Vacuum Heater shall not exceed the following emission rate.
   a. Carbon monoxide (CO) – 11.8 (1.18 x 10^3) lb/hour – 40 CFR 60, Appendix A, Method 10

Compliance with this condition shall be determined by conducting an initial source performance test conducted within 120 days of initial startup. Test methods 1 through 4 of 40 CFR 60, Appendix A shall be used in conjunction with the method listed above. Any proposed alternative test method shall be approved in advance by the NWCAA. All testing shall be done under maximum operating rates that are at, or above, 90% of the design firing rate. The source test shall be conducted in accordance with NWCAA Section 365 and NWCAA "Guidelines for Industrial Monitoring Equipment and Data Handling”.

5. An operating and maintenance (O & M) manual shall be maintained on site for the South Vacuum Heater that includes information on O & M of the ultra-low NOx burner.

6. The NWCAA shall be notified in writing of the startup date of the South Vacuum Heater following completion of the South Vacuum Heater Improvement Project. This notification shall be postmarked no later than 15 days after the heater startup.

7. Conditions 1.3.1, 1.3.2, 2.3.1 and 2.3.2 of NWCAA OAC #689 shall become void upon startup of the South Vacuum Heater following completion of the South Vacuum Heater Improvement Project.

Dan Mahar, PE
Permitting Engineer

Lynn Billington, PE
Reviewing Engineer

James Randles
Director

Revision A: Condition 3 - remove the NOx ppm emission limit and specify only a lb/hour NOx limit. Increase the NOx mass emission limit from 8.9 to 10.5 lb/hour following CEM certification and the results of initial source testing. This NOx limit is used to provide a federally enforceable reduction at the refinery as obligated under the BP consent decree.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 897a

Project Summary: Construct and operate a new crude oil storage tank.

Approved Emission Units:
- Tank 40, internal floating roof storage tank equipped with metallic shoe primary seal and rim mounted secondary seal (364,000 barrel nominal storage capacity).

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Scott Inloes

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes OAC 897 issued November 15, 2004.

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 QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems
National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

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

1. Maintain records for Tank 40 that include; the number of turnovers per calendar year, and periods of time including dates that each type of liquid was stored.

Dan Mahar, P.E.  
Environmental Engineer

Mark Buford, P.E.  
Assistant Director

Revision a: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 892d

Project Summary: Construct and operate a second Diesel Hydro-Desulfurization (#2 DHDS) Unit. The project includes a new 35 MMBtu Higher Heating Value (HHV) per hour charge heater and associated hydrocarbon processing equipment. The project will allow the refinery to produce ultra-low sulfur diesel products.

Approved Emission Units:
- One charge heater within the #2 DHDS Unit.
- Components in VOC service installed as part of this project.

<table>
<thead>
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<td>Blaine, WA 98230</td>
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</table>

Contact: Sahil Patel, Environmental Engineer

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 892c issued April 12, 2018.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)
• 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 from Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

1. Limit fuel combusted in the #2 DHDS Charge Heater to pipeline grade natural gas and refinery fuel gas.

2. Heat input to the #2 DHDS Charge Heater shall not exceed 35 MMBtu/hour calculated using fuel gas HHV over a 720-hour rolling average. Keep records of the 720-hour rolling MMBtu/hour average heat input to the heater.

3. Visual emissions from the #2 DHDS Charge Heater stack shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Department of Ecology Method 9A.

4. The hydrogen sulfide (H₂S) content of fuel gas combusted in the #2 DHDS Charge Heater shall not exceed any of the following limits:
   (A) 162 ppmv, based on a 3-hour rolling average.
   (B) 50 ppmv, based on a 24-hour rolling average.

   Demonstrate compliance with this condition by installing, calibrating, maintaining, and operating a continuous emission monitor (CEM) to measure H₂S in the fuel gas. The monitor must meet the appropriate requirements of 40 CFR 60 Subpart J, 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.

5. Emissions of nitrogen oxides (NOₓ) from the #2 DHDS Charge Heater shall not exceed 0.035 lb/MMBtu.

   Determine compliance with this condition by conducting an annual source test for NOₓ within 13 months of the previous year’s source testing date. Use test methods 1 through 4 and 7E of 40 CFR 60 Appendix A. NWCAA must approve any proposed alternative test methods in advance. Conduct the test in accordance with NWCAA Section 367 and NWCAA Appendix A.

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.
Conduct source testing while firing the heater at a load that is both representative of normal operations at the time of the test, and that is the maximum firing rate that is reasonably achievable given the current unit operating conditions. Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) Fuel flow, in Mscf/hr,
(B) Fuel gas HHV in Btu/scf, sampled once on the day of the test,
(C) Firing rate, in MMBtu/hr, and,
(D) Stack flow rate, in dry Mscf/hr.

(6) Emissions of carbon monoxide (CO) from the #2 DHDS Charge Heater shall not exceed 70 ppmvd at seven percent oxygen (O₂).

Determine compliance with this condition by conducting an annual source test for CO within 13 months of the previous year’s source testing date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency must revert back to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit. Use Methods 1 through 4 and 10 of 40 CFR 60 Appendix A. NWCAA must approve any proposed alternative test methods in advance. Conduct the test in accordance with NWCAA Section 367 and NWCAA Appendix A.

Conduct source testing while firing the heater at a load that is representative of normal operations at the time of the test. Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) Fuel flow, in Mscf/hr,
(B) Fuel gas HHV in Btu/scf, sampled once on the day of the test,
(C) Firing rate, in MMBtu/hr, and,
(D) Stack flow rate, in dry Mscf/hr.

(7) Keep an operation and maintenance (O&M) manual on site for the #2 DHDS Charge Heater that includes information on the O&M of the ultra-low NOₓ burners.

(8) In addition to the requirements of 40 CFR 60 Subpart GGG, the following provisions are in effect for valves and pumps that have the potential to leak volatile organic compounds (VOC) or hazardous air pollutants (HAP) located in the #2 DHDS Unit.

(A) Utilize the following leak definitions:
   (i) 500 ppm for block valves and control valves, and,
   (ii) 2,000 ppm for pumps.

(B) Record, track, repair, and re-monitor all leaks greater than the leak definitions in Condition (8)(A) of this Order. BP will have 30 days to make repairs on and re-monitor leaks that are greater than the leak definitions in Condition (8)(A) of this Order and less than the applicable 40 CFR 60 Subpart GGG leak definition.
(C) For monitoring instrument calibration, use a mixture of methane or n-hexane and air at a concentration of 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 calibrate the lower scale with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and calibrate the highest scale 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) Perform a calibration drift assessment, 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 40 CFR Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. 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.

(E) Record the instrument reading for each scale used to comply with Condition (8)(C), including:

(i) Date of calibration and initials of operator performing the calibration,
(ii) Calibration gas cylinder identification, certification date, and certified concentration,
(iii) Instrument scale(s) used,
(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of 40 CFR Part 60,
(v) Results of each calibration drift assessment required by Condition (8)(D), and,
(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

Robyn Jones, E.I.T.
Environmental Engineer

Agata McIntyre, P.E.
Engineering Manager

Revision a: Correct heater size from 25.2 to 35 MMBtu/hour, clarify the process unit as the #2 DHDS, remove references to NWCAA Section 365, Section 366 and "Guidelines for Industrial Monitoring Equipment and Data Handling" and replace with the NWCAA Section 367 and NWCAA Appendix A, adjust the firing rate requirement for source testing from 90% to 80% and add a condition to limit the heater to 35 MMBtu/hour.
Revision b: Revise Condition 5 to allow the charge heater to be performance tested under representative conditions. Remove Condition 8, requirement for initial startup notification.

Revision c: Clarify LDAR program requirements in Condition (7). Revise language to reflect current NWCAA standards.

Revision d: Remove 720-hr rolling firing rate source testing triggers. Separate NOx and CO emission limit conditions. Reduce CO source testing frequency. Clarify source test reporting requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 850a

Project Summary: Increase rate of vacuum gas oil that can be processed at the hydrocracker unit by 2,600 barrels per day to produce additional jet and gasoline products.

Approved Emission Units:
- Components in hazardous air pollutant (HAP) service installed as part of this project.

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<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Ryan O'Larey</td>
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</table>

Permit History:
- As of the date of issuance, this Order supersedes NWCAAOAC 850 issued December 1, 2003.

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

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

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.
(1) In addition to the requirements of 40 CFR 63 subpart CC, the following provisions are in effect for valves that have the potential to leak HAP installed in support of this project.

a. Utilize the following leak definition:
   i. 500 ppm for block valves and control valves.

b. Record, track, repair, and re-monitor all leaks greater than the leak definition in Condition (1)a of this Order. BP will have thirty (30) days to make repairs on and re-monitor leaks that are greater than the leak definitions in Condition (1)a of this Order and less than the applicable regulatory leak definition of 40 CFR 63 Subpart CC.

c. For monitoring instrument calibration, use 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 calibrate the lower scale with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and calibrate the highest scale 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. Perform a calibration drift assessment, 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 40 CFR Part 60, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. 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.

e. Record the instrument reading for each scale used to comply with Condition (1)c, including:
   i. Date of calibration and initials of operator performing the calibration.
   ii. Calibration gas cylinder identification, certification date, and certified concentration.
   iii. Instrument scale(s) used.
   iv. A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of 40 CFR Part 60.
v. Results of each calibration drift assessment required by Condition (1)d.

vi. If an owner or operator makes their own calibration gas, a description of the procedure used.

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Robyn Jones, E.I.T.  
Environmental Engineer

Agata McIntyre, P.E.  
Engineering Manager

Revision a: Clarify LDAR program requirements in Condition (1). Update condition formatting to plain language.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 847d

Project Summary: Retrofit the Hydrocracker 2nd Stage Fractionator Reboiler with low-NOx burners as part of a negotiated agreement in response to the refinery operating combustion turbine generators in 2001 without new source review.

Approved Emission Units:
- Hydrocracker 2\textsuperscript{nd} Stage Fractionator Reboiler with low-NOx burners

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP Cherry Point Refinery</td>
<td>BP Cherry Point Refinery</td>
</tr>
<tr>
<td>4519 Grandview Road</td>
<td>4519 Grandview Road</td>
</tr>
<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Sahil Patel</td>
<td></td>
</tr>
</tbody>
</table>

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 847c issued September 26, 2018.

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
- 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)
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

(1) The Hydrocracker 2nd Stage Fractionator Reboiler shall combust only natural gas and/or refinery fuel gas.

(2) Visible emissions from the reboiler shall not exceed five percent opacity for more than three minutes in any 60-minute period as determined by Washington State Department of Ecology, Source Test Method 9A.

(3) The maximum firing rate of the reboiler shall not exceed 183.4 MMBtu/hour higher heating value (HHV) based on a 720-hour rolling average of the most recent 720 full operating hours.

(4) Emissions of nitrogen oxides (NOx) from the Hydrocracker 2nd Stage Fractionator Reboiler shall not exceed 0.07 lb/MMBtu (HHV) as a one-hour average.

Compliance with this condition shall be demonstrated by an average of three one-hour test runs during an annual source test, conducted within 13 months of the previous source testing date. During testing the reboiler shall be fired at a rate that is as close to its maximum capacity as practical. If the reboiler is fired at a rate that is less than 90% of its maximum capacity, the reason shall be explained in the source test report. Testing shall be conducted in accordance with 40 CFR 60 Appendix A, Methods 7E and 19, and NWCAA Section 367 and Appendix A. A fuel gas composition analysis shall be conducted using a gas chromatograph of the fuel gas being fired in the Hydrocracker 2nd Stage Fractionator Reboiler during source testing.

Record the following process parameters at least once every 15-minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) Reboiler firing rate, in MMBtu/hr,
(B) Fuel consumption rate, in Mscf/hr, and,
(C) Fuel gas composition analysis, specific gravity, and HHV in Btu/scf, sampled once on the day of the test.

(5) An operating and maintenance (O&M) manual shall be maintained on site for the reboiler that includes information on O&M of the low NOx burners.

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.
Revision a: Correct the visual emissions compliance method and add a heat input limit.
Revision b: Reformat for AOP Cleanup.
Revision c: Reformat OAC for AOP renewal. Remove requirement for prior approval of reboiler firing rate during source test.
Revision d: Clarify periodic source testing frequency and reporting requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 814d

Project Summary: Clean Gasoline Project ("Isom Project") is comprised of constructing a new Isomerization process unit and constructing a new boiler (#5 Boiler) to replace the #2 Boiler. The Isomerization Unit includes a straight run naphtha dehexanizer, naphtha hydrotreater, benzene saturation system and IHT process heater. This summary includes the modifications to the Isomerization Unit approved in 2017 as part of the Isom Flare Minimization Project.

Approved Emission Units:

• Process equipment associated with the Isomerization Unit
• Isomerization IHT Heater equipped with ultra-low nitrogen oxide (NOx) (ULNB) burners (13 MMBtu/hour nominal heat input capacity)
• #5 Boiler equipped with ULNB (363 MMBtu/hour nominal heat input capacity)

<table>
<thead>
<tr>
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<th>Facility Name and Location</th>
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</thead>
<tbody>
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<td>BP Products North America Inc.</td>
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<td>Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Sahil Patel</td>
<td></td>
</tr>
</tbody>
</table>

Permit History

• As of the date of issuance, this Order supersedes NWCAA OAC 814c, issued July 25, 2017.

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-Intuitional Steam Generating Units
• 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
• 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983 and on or before November 7, 2006
• 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 FF – National Emissions Standards 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

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:**

1. **(1)** The #5 Boiler and Isomerization IHT Heater shall combust only natural gas and/or refinery fuel gas.

2. **(2)** Visible emissions from either the #5 Boiler or Isomerization IHT Heater shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Washington Department of Ecology Method 9A.

3. **(3)** Fuel combusted in either the #5 Boiler or Isomerization IHT Heater shall not exceed any of the following hydrogen sulfide (H2S) concentration limits:
   - (A) 162 ppm, 3-hour rolling average,
   - (B) 50 ppm, 24-hour rolling average.

   Ongoing compliance with this condition shall be demonstrated by operating a continuous emissions monitoring system (CEMS) that is installed, calibrated, and maintained in accordance with 40 CFR 60 Subpart J, 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

4. **(4)** Vacuum tower and vacuum diesel fractionator tail gases (vacuum tail gas) generated in the Crude and Vacuum Unit shall not exceed 162 ppmv H2S based on a 3-hour rolling average prior to combustion in any device. Compliance with this condition shall be demonstrated by operating a CEMS installed, calibrated, and maintained in accordance with 40 CFR 60 Subpart J, 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A.

5. **(5)** Maintain equipment components within the Isomerization unit that have the potential to

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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.
leak volatile organic compounds using a program meeting the standards, monitoring, recordkeeping, and reporting requirements of 40 CFR 60 Subpart GGGa.

Revision a: Remove “proposed” from the 40 CFR 63 Subpart DDDDD reference.

Revision b: Reformat for AOP cleanup including removal of all source testing requirements.

Revision c: Incorporate equipment components within the Isomerization Unit, including those for the new flare minimization project, into an LDAR program compliant with 40 CFR 60 Subpart GGGa. Clarify that the #5 Boiler is not subject to LDAR requirements.

Revision d: Revise the 500 ppm H2S, 3-hour rolling average Vacuum Tail Gas limit to 162 ppm H2S, 3-hour rolling average prior to incorporation in the ongoing AOP renewal. Revise the visual emissions observation method from EPA Method 9 to Washington Department of Ecology Method 9A, to align with the existing compliance demonstration for other units on site in the AOP.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 716b

Project Summary: Modifications to the Marine Terminal including construction of the North Dock and associated vapor collection and control systems used during product loading.

Approved Emission Units:
- Modified dock piping system
- North Berthing>Loading Dock
- Vapor collection and control system serving the South and North Docks during loading operations. The control system is comprised of a thermal oxidizing vapor combustor with natural gas supplied as supplemental fuel.

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Valerie Lagen

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History

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)

- 40 CFR 61 Subpart BB – National Emission Standard for Benzene Emissions from Benzene Transfer Operations

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

1. The berthing docks shall be equipped with a vapor collection system that is designed to collect VOC vapors displaced from marine vessels during loading of all light refinery products. For the purpose of this approval, the term light refinery products shall be defined as products with vapor pressure greater than or equal to 1.5 psia at standard conditions, 20 degrees C and 760 mm Hg.

2. Marine tank vessel loading of light refinery product shall be limited to those vessels that are equipped with vapor collection equipment that is compatible with the terminal’s vapor control system.

3. Marine tank vessel loading of light refinery products shall be limited to those vessels that are vapor-tight and to those vessels that are connected to the vapor collection system.

4. Thermal oxidation of the captured vapors from the marine tank vessel loading operations shall reduce VOCs by 98 weight percent.

5. Loading of light refinery product may be performed without emission control for a period not to exceed 14 days in any consecutive 12-month period to allow for maintenance on the vapor control equipment. A day is defined as any portion of a calendar day in which loading of light refinery products is performed without emission control due to maintenance of the vapor collection or control equipment. Records for all maintenance performed on the air pollution control equipment shall be maintained.

6. Records of total refinery products loaded at each berthing dock shall be maintained on site.

7. At all times including periods if startup and malfunction, owners or operators shall operate the terminal in a manner consistent with safety and good air pollution control practices for minimizing emissions. Standard operating procedure shall be made available to the NWCAA upon request.
Revision a: Approval to connect the vapor collection and control system to the south dock.

Revision b: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 689c

Project Summary: The Delayed Coker Unit and #1 and #2 Calciner Unit were modified to increase the calcined coke production rate from 28 to 38 tons per hour for each hearth. The modifications included replacing the four Delayed Coke drums with larger drums. The South Vacuum Heater was retrofitted with ultra-low nitrogen oxide (NOx) burners to provide NOx netting offsets for the project.

Approved Emission Units:
- Modifications to process equipment at the Delayed Coker Unit
- Modifications to the #1 and #2 Calciner including construction of a caustic scrubber and wet electrostatic precipitator to control emissions from the combined stack (38 tons per hour nominal calcined coke production rate per hearth)
- Ultra-low NOx burner retrofit of the South Vacuum Heater (222 MMBtu/hour nominal heat input capacity)
- Modifications to the defunct North and South Delayed Coker Heaters including installation of staged combustion air and flue gas recirculation (190 MMBtu/hour nominal heat input capacity per heater)

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP Products North America Inc.</td>
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<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
</tr>
</tbody>
</table>

Contact: Sahil Patel

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 689b, issued September 18, 2012.

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

New Source Performance Standards (NSPS)
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983 and on or before November 7, 2006
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 CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

(1) Comply with the following emission limits and standards.

<table>
<thead>
<tr>
<th>Cond.</th>
<th>Unit</th>
<th>Pollutant</th>
<th>Emission Limit or Standard</th>
<th>Averaging Period</th>
<th>Underlying Requirement</th>
<th>Maximum Emissions, Cumulative 12-month Rolling</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>#1 &amp; #2 Calciners (Stack #1)</td>
<td>NO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>325 ppmvd @ 7% O&lt;sub&gt;2&lt;/sub&gt;</td>
<td>Calendar day</td>
<td>BACT</td>
<td>509 tons</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Stack #1</td>
<td>SO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>35 ppmvd @ 7% O&lt;sub&gt;2&lt;/sub&gt;</td>
<td>Calendar day</td>
<td>OAC 660a</td>
<td>175 tons</td>
</tr>
<tr>
<td>1.1.3</td>
<td></td>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
<td>--</td>
<td>--</td>
<td>PSD Threshold</td>
<td>34 tons</td>
</tr>
<tr>
<td>1.1.4</td>
<td></td>
<td>H&lt;sub&gt;2&lt;/sub&gt;SO&lt;sub&gt;4&lt;/sub&gt;</td>
<td>62 mg/dscm @ 7% O&lt;sub&gt;2&lt;/sub&gt;</td>
<td>Calendar day</td>
<td>PSD Threshold</td>
<td>39 tons</td>
</tr>
<tr>
<td>1.1.5</td>
<td></td>
<td>Opacity</td>
<td>20% Ecology M9B</td>
<td>6 minute, aggregate</td>
<td>BACT</td>
<td>--</td>
</tr>
</tbody>
</table>

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.
Cond. | Unit | Pollutant | Emission Limit or Standard | Averaging Period | Underlying Requirement | Maximum Emissions, Cumulative 12-month Rolling
--- | --- | --- | --- | --- | --- | ---
1.2 | Vacuum Tail Gas\(^2\) prior to combustion | H\(_2\)S | 162 ppmvd | 3-hour rolling average | WAC 173-400-113\(^3\) | --

(2) Compliance shall be demonstrated by the following monitoring methods. Continuous emissions monitoring systems (CEMS) shall be compliant with the appropriate requirements of 40 CFR 60 Appendices B and F, and NWCAA Regulation Section 367 and Appendix A.

<table>
<thead>
<tr>
<th>Cond.</th>
<th>Unit</th>
<th>Pollutant</th>
<th>Monitoring Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1</td>
<td>#1 &amp; #2 Calciners (Stack #1)</td>
<td>NO(_x)</td>
<td>CEMS</td>
</tr>
<tr>
<td>2.1.2</td>
<td></td>
<td>SO(_2)</td>
<td>CEMS</td>
</tr>
<tr>
<td>2.1.3</td>
<td></td>
<td>PM(_{10})</td>
<td>Operate in accordance with the #1 &amp; #2 Calciner Monitoring Plan most recently approved by NWCAA.</td>
</tr>
<tr>
<td>2.1.4</td>
<td></td>
<td>H(_2)SO(_4)</td>
<td>Operate in accordance with the #1 &amp; #2 Calciner Monitoring Plan most recently approved by NWCAA.</td>
</tr>
<tr>
<td>2.2</td>
<td>Vacuum Tail Gas prior to combustion</td>
<td>H(_2)S</td>
<td>CEMS</td>
</tr>
</tbody>
</table>

(3) Monthly reports shall be submitted to the NWCAA within 30 days of the end of the reported month. The report shall include the following information.

<table>
<thead>
<tr>
<th>Cond.</th>
<th>Unit</th>
<th>Pollutant</th>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1</td>
<td>#1 &amp; #2 Calciners (Stack #1)</td>
<td>NO(_x)</td>
<td>ppmvd @ 7% O(_2), monthly highest calendar day average</td>
</tr>
<tr>
<td>3.1.2</td>
<td></td>
<td>SO(_2)</td>
<td>ppmvd @ 7% O(_2), monthly highest calendar day average</td>
</tr>
<tr>
<td>3.2</td>
<td>Vacuum Tail Gas prior to combustion</td>
<td>H(_2)S</td>
<td>ppmvd, monthly highest 3-hour rolling average</td>
</tr>
</tbody>
</table>

\(^2\) Vacuum Tail Gas means Vacuum Tower and Vacuum Diesel Fractionator tail gases generated in the Crude and Vacuum Unit.

\(^3\) Compliance with a 162 ppm H\(_2\)S, 3-hour rolling average memorializes a previously relied upon SO\(_2\) PSD offset as permanent and enforceable, as required by WAC 173-400-113.
Revision a: Convert the Delayed Coker Charge Heaters NO\textsubscript{x}, SO\textsubscript{2}, and CO emission limits to lb/hour, and lower the annual SO\textsubscript{2} emission limit accordingly.

Revision b: Revise for AOP Cleanup including converting the H\textsubscript{2}SO\textsubscript{4} limit to mg/dscm.

Revision c: Remove obsolete conditions for defunct North and South Coker Heaters, correct the units of an emission limit from mg/dscf to mg/dscm, and replace the requirement to reduce H\textsubscript{2}S in the Vacuum Tail Gas by 80% with a 162 ppmvd H\textsubscript{2}S limit, as a 3-hour rolling average.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 660b

Project Summary: Replace a portion of the Monsanto Dynawave scrubbing system on the #1 and #2 Calciner stack with a wet electrostatic precipitator (WESP).

Approved Emission Units:
• Modifications to the #1 and #2 Calciner air pollution control equipment including construction a new wet electrostatic precipitator downstream of the existing quencher and polisher.

<table>
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<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
</tr>
<tr>
<td>Contact: Sahil Patel, Environmental Engineer</td>
<td></td>
</tr>
</tbody>
</table>

Permit History
• As of the date of issuance, this Order supersedes NWCAA OAC 660a, issued September 18, 2012.

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

New Source Performance Standards (NSPS)
• 40 CFR 60 Subpart A - General Provisions
• 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
• 40 CFR 60 Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983 and on or before November 7, 2006
• 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions1:

(1) Emissions of sulfuric acid mist (H₂SO₄) shall not exceed 15.0 pounds per hour. Compliance with this condition shall be determined by conducting source testing within 13 months of the

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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.
previous source test date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every two years, and within 25 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source testing frequency shall revert back to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit.

Perform testing in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 4, and 8, Conditional Test Method 13, NWCAA Section 367 and Appendix A. Alternative test methods may be used when approved in advance by the NWCAA.

Record the following process and control device parameters at least once every 15 minutes for each individual test run unless otherwise specified below, and include in the source test report:

(A) Calcined coke production rate (STPH),
(B) WESP operating configuration and operational mode, recorded once for each test run,
(C) Predicted or measured actual WESP stack flow (acfm), and,
(D) WESP secondary voltages and currents (kV and mA, 1-hour average).

(2) Emissions of SO₂ from the #1 and #2 Calciner stack shall not exceed 35 ppmv corrected to 7% O₂, calendar day average, and 175 tons per consecutive 12-month rolling total. Compliance with this condition shall be determined by operating a certified continuous emission monitoring system (CEMS) for sulfur dioxide and oxygen. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

(3) Visible emissions from the #1 and #2 Calciner stack shall not exceed 20% opacity as determined by Washington State Department of Ecology Method 9B. Compliance shall be determined by conducting qualitative visual observations of the stack at least once per calendar quarter. If visible emissions are observed, monitor by Ecology Method 9B within 24 hours. A record of each observation shall be maintained on site.

(4) Monthly reports shall be submitted to the NWCAA within 30 days of the end of the reported month. The report shall include the following information:

(A) SO₂ emitted from the #1 and #2 Calciner stack per consecutive 12-month rolling total.
(B) The highest calendar day average SO₂ concentration in the #1 and #2 Calciner stack as ppmv corrected to 7% O₂.

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.ecuho.wa.gov/ under PCHB.
Revision a: Reformat and revise for AOP Cleanup.

Revision b: Reformat for AOP cleanup. Reduce Calciner Stack #1 H₂SO₄ source testing frequency from annual to once every two years after three consecutive years of results that are 50% or less than the applicable limit. Clarify source test reporting requirements. Update visual emissions compliance demonstration method for consistency with AOP requirements.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 640a

Project Summary: Crude Fractionation Project including construction of a new prefractionation tower and replacing the debutanizing and vacuum towers in the Crude and Vacuum Unit. The project is designed to increase the refinery’s capacity to process crude oil.

Approved Emission Units:
- Process equipment modifications at the Crude and Vacuum Unit.

Applicant
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Scott Inloes

Owner
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

Facility Location:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes OAC 640 issued May 1, 1998.

Note that in addition to other applicable rules and regulations, 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)
• 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

As authorized by the Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions:\(^1\):

1. The NWCAA shall be notified when the project is complete including the expected date of startup.

\[\text{Signature}\]
Dan Mahar, P.E.
Environmental Engineer

\[\text{Signature}\]
Mark Buford, P.E.
Assistant Director

Revision a: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 620b

Project Summary: Construct and operate a new crude oil storage tank.

Approved Emission Units:
- Tank 49, internal floating roof storage tank equipped with metallic shoe primary seal and rim mounted secondary seal (400,000 barrel nominal storage capacity).

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Scott Inloes

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes OAC 620 issued August 13, 1997, and OAC 620a issued August 8, 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 QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems
National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

As authorized by the Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions:\(^1\):

1. Maintain records for Tank 49 that include; the number of turnovers per calendar year, and periods of time including dates that each type of liquid was stored.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Remove conditions that overlap with federal requirements.
Revision b: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 562d

Project Summary: Construct and operate a light reformate splitter tower in the #1 Refomer Unit to concentrate benzene and remove from gasoline blending components.

Approved Emission Units:
- Process equipment modifications at the #1 Refomer Unit including a new light reformate splitter tower.
- Operational changes at existing internal floating roof storage Tanks 1-10 and 14.

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Valerie Lagen

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History

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)
• 40 CFR 61 Subpart A - General Provisions
• 60 CFR 61 Subpart J - National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene
• 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 the Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions:\footnote{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.}

1. Benzene concentrate from the light reformate splitter tower shall only be stored in Tanks 1 through 10, or Tank 14.

2. Transfers of the benzene concentrate from the light reformate splitter tower between any of Tanks 1 through 10, or Tank 14 shall be conducted only to facilitate maintenance or inspection of one or more of the tanks.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Limit storage of the benzene concentrate to specific tanks.
Revision b: Allow transfer of benzene concentrate between specific tanks.
Revision c: Revised list of tanks that are allowed to transfer benzene concentrate.
Revision d: Reformat for AOP cleanup.

Page 2 of 2
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 527f

**Project Summary:** Construct and operate a truck loading rack for loading fuel products into transport tanks. The project includes the construction of three new product storage tanks.

**Approved Emission Units:**
- Truck Loading Rack equipped with a thermal oxidizer to combust recovered vapors.
- Two internal floating roof storage tanks with liquid mounted primary seals, Tanks 73 and 74 (10,000 barrel capacity each)
- One internal floating roof storage tank with liquid mounted primary seals, Tank 72 (20,000 barrel capacity)

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<td>Contact: Sahil Patel</td>
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**Permit History**
- As of the date of issuance, this Order supersedes NWCAA OAC 527e issued August 29, 2018.

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**
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart XX- Standards of Performance for Bulk Gasoline Terminals
• 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

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:**

**Truck Loading Rack**

1. The loading terminal shall employ submerged loading or bottom loading.

2. All loading lines and vapor lines shall be equipped with vapor-tight fittings which close automatically upon disconnect. The point of closure shall be on the tank side of any hose or immediate connecting line.

3. All vapor return lines shall be connected between the transport tank and the vapor control system such that all displaced VOCs are vented into the vapor recovery system during gasoline loading.

4. The emissions to the atmosphere from the vapor collection system are not to exceed 10 milligrams of total organic compounds per liter of gasoline loaded. The vapor control system shall prevent the emission of at least 90 percent by weight of the VOCs. Compliance shall be demonstrated by conducting emission testing according to EPA Method 25 or another method approved in advance by NWCAA. If no gasoline loading event occurs more than 18 months after the most recent test, no test is required. If a gasoline loading event occurs more than 18 months after the most recent test, conduct a new test within 180 days of the loading event.

5. The vapor control system shall be equipped with an appropriate alarm system to alert personnel when the system is not in compliance with NWCAA Section 580.424.

6. All loading arms shall be designed, maintained and operated to prevent overfill, prevent fugitive liquid or vapor leaks, and prevent excess gasoline drainage during disconnect in accordance with the requirements of NWCAA Section 580.10.

7. Each calendar month that the loading terminal is in use as a gasoline loading rack, the vapor collection system, the vapor processing system, and each loading rack handling

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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.
gasoline shall be inspected during the loading of gasoline cargo tanks for liquid or vapor leaks of volatile organic compounds. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after detection. A record of each monthly leak inspection shall be maintained on site.

(8) The vapor collection and gasoline loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank exceeding 4,500 Pascals (450 mm of water) during gasoline loading. This level is not to be exceeded when measured by the procedures specified in 60.503(d). A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure within 2.5 mm of water precision, shall be calibrated and installed in the terminal’s vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck.

(9) A record of all replacement or additions of components performed on the vapor processing system shall be maintained on site.

(10) Emissions from the Truck Loading Rack shall be included in the annual emission inventory report submitted to the NWCAA.

(11) Loading at the Truck Loading Rack shall not exceed:
   
   (A) 26,000 barrels per day of gasoline, and
   
   (B) 76,000 barrels per day of diesel and jet fuel combined.

(12) A record of the calendar day loading rate of gasoline, diesel and jet fuels at the Truck Loading Rack shall be maintained on site.

Storage Tanks 72, 73 and 74

(13) The storage tanks shall be used to store only gasoline or diesel.

(14) No more than two of the three tanks shall contain gasoline at any given time.

(15) Maintain records for each tank that include: tank dimensions, capacity, number of turnovers per calendar year, and periods of time including dates that each type of liquid was stored.

Revisions a and b: Expand the Truck Loading Rack from two to three loading bays.

Revision c: Increase the allowable throughput of the Truck Loading Rack.

Revision d: Reformat for AOP Cleanup.

Revision e: Reformat OAC for AOP renewal. Clarify conditions for gasoline loading.

Revision f: Clarify Truck Loading Rack source testing requirements.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 382a

Project Summary: Construct and operate a non-hazardous waste landfill.

Approved Emission Unit:
- Non-hazardous waste landfill

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Scott Inloes

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 382 issued July 30, 1992.

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

1. Emissions from the landfarm shall be reported on an annual basis as part of the NWCAA emissions inventory.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 351f

Project Summary: Construct and operate the #4 Boiler to provide utility steam for the refinery. This gas-fired boiler has a nominal heat input capacity of 216 MMBtu/hour, higher heating value (HHV). Nitrogen oxides (NOₓ) will be controlled through low NOₓ burners and flue gas recirculation (FGR).

Approved Emission Unit:
- One 216 MMBtu/hr HHV capacity boiler (#4) with low NOₓ burners and FGR.

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<th>Facility Name and Location</th>
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<td>Contact: Sahil Patel, Env. Engineer</td>
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Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 351e issued May 10, 2010.

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

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)/Maximum Achievable Control Technology Standards (MACT)
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions**:

1. Visual emissions from the boiler stack shall not exceed five percent opacity for more than three aggregated minutes in any 60-minute period as measured by Washington State Department of Ecology Method 9A.

2. The boiler shall burn only natural gas or refinery gas having a hydrogen sulfide (H$_2$S) content of less than 162 ppm, based on a three hour rolling average. Compliance shall be demonstrated by operating a continuous emissions monitor system (CEMS) for H$_2$S in accordance with 40 CFR 60 Subpart J, NWCAA Section 367 and NWCAA Appendix A.

3. Nitrogen oxides (NOx) from the #4 Boiler shall not exceed the following emission limit:
   
   (A) 33 ppm by volume, dry basis, corrected to three percent oxygen (O$_2$), based on a 24-hour rolling average.

   If the concentration based limit is exceeded, the following mass emission rate limit shall be used to demonstrate compliance:

   (B) 8.63 lb/hour based on a 24-hour rolling average.

   Compliance with Condition (3) of this Order shall be demonstrated by operating a certified CEMS for NOx and O$_2$. The CEMS shall be installed, calibrated, maintained and operated in accordance with appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A. If the concentration limit of Condition (3)(A) is exceeded, compliance with the alternative mass emission limit of Condition (3)(B) shall be determined by using calculations detailed in Method 19, and using appropriate F-factors calculated based on a fuel composition analysis conducted within 14 days of the event.

4. Carbon monoxide (CO) from the #4 Boiler shall not exceed 15.9 lb/hour.

   Demonstrate compliance with this condition by conducting source testing within 13 months of the previous source test date. If three consecutive source tests demonstrate emissions of 50% or less than the limit in this condition, source testing frequency may be reduced to once every five years, and within 61 months of the previous source testing date. If a source test demonstrates emissions are greater than 50% of the limit in this condition, source

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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.
testing frequency shall revert back to once every 13 months until three consecutive tests demonstrate emissions of 50% or less than the limit.

Use the average of three test runs executed in accordance with test methods 1, 2, 3A, 4, and 10 of 40 CFR 60 Appendix A, NWCAA Section 367, and NWCAA Appendix A. NWCAA must approve any proposed alternative test methods in advance.

During testing the boiler shall be fired at a rate that is representative of normal operating conditions at the time of the test. Record the following process parameters at least once every 15-minutes for each individual test run, unless otherwise specified below, and include in the source test report:

(A) \( \text{O}_2 \) and \( \text{NO}_x \) CEMS data,
(B) Firing rate, in MMBtu/hr based on higher heating value (HHV),
(C) Steam production, in 1000-lb/hr,
(D) Fuel consumption rate, in Mscfh, and,
(E) Fuel gas specific gravity and HHV, in Btu/scf, sampled once on the day of the test.

(5) An operation and maintenance (O&M) manual for equipment that has the potential to affect air pollutant emissions to the atmosphere shall be developed and followed. A copy of the O&M manual shall be available to NWCAA upon request. Excess emissions that result from a failure to follow the O&M manual may be considered proof that the equipment was not properly operated and maintained.

(6) Submit calendar month total \( \text{NO}_x \) emissions from the #4 Boiler on monthly emission reports.

Robyn Jones, E.I.T.  
Environmental Engineer  

Agata McIntyre, P.E.  
Engineering Manager

Revision A: Eliminated requirement on maximum steam production and testing requirements for \( \text{PM}_{10} \), \( \text{VOC} \), and \( \text{SO}_2 \).

Revision B: Due to results of source emission test results for \( \text{NO}_x \) and \( \text{CO} \) the emission concentration requirement for \( \text{NO}_x \) was deleted and the requirement for a \( \text{CO} \) continuous emission monitor was removed.

Revision C: Removed \( \text{CO} \) emission limit and monitoring requirement based on decreased \( \text{CO} \) emissions resulting from burner changeout.

Revision D: Removed reference to \( \text{CO} \) in Condition 7, which was removed in previous revisions. Add condition for monthly reporting of \( \text{NO}_x \) from the #4 Boiler.

Revision E: Reformat and reword conditions for AOP cleanup. Revise \( \text{NO}_x \) conditions to provide creditable consent decree reductions attributed to the flue gas recirculation modification project. Add \( \text{CO} \) conditions and a startup notice.
Revision F: Reformat for AOP cleanup. Remove obsolete and superseded conditions. Reduce #4 Boiler CO source testing frequency from annual to once every 5 years after 3 years of results less than 50% of CO limit.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 348a

Project Summary: Modifications to oily wastewater storage, collection and treatment systems to control benzene emissions as required under 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations.

Approved Emission Units:
- Storage Tanks 320, 321, 322 and 323 each equipped with an internal floating roof with primary seals.
- Seals and enclosures on wastewater collection systems.
- A combination of fixed roof covers routed to activated carbon and floating roof covers at the wastewater treatment plant.

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230
NOC Contact: Scott Inloes

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 348 issued January 8, 1992.

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)


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

1. Include benzene and VOC emissions emitted from oily wastewater collection, storage, and treatment systems in annual emission inventory reports.

\[\text{Signature}\]
Dan Mahar, P.E.  
Environmental Engineer

\[\text{Signature}\]
Mark Buford, P.E.  
Assistant Director

Revision a: Reformat for AOP cleanup.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 305b

Project Summary: Construct and operate the #2 Reformer Unit to improve the octane of gasoline blending components to meet the federally mandated phase out of tetra-ethyl lead.

Approved Emission Units:
- Process equipment associated with the #2 Reformer Unit
- #2 Reformer Heater (340 MMBtu/hour nominal heat input capacity)

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<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
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<tr>
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Contact: Sahil Patel, Environmental Engineer

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 305a, issued May 3, 2012.

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

New Source Performance Standards (NSPS)
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983 and on or before November 7, 2006
- 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 CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

**Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions**:  
1: 

(1) The #2 Reformer Heater shall not exceed 340 MMBtu/hour, higher heating value (HHV).

(2) Hydrogen sulfide (H₂S) in the fuel gas combusted in the #2 Reformer shall not exceed any of the following limits:
   
   (A) 162 ppm for any three-hour average, and 
   
   (B) 50 ppm based on a 24-hour rolling average.

   Continuous compliance with this condition shall be demonstrated by operating a certified continuous emission monitoring system (CEMS) for H₂S in the fuel gas combusted in the #2 Reformer Heater. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the appropriate specifications of 40 CFR 60 Appendices B and F, and NWCAA Section 367 and Appendix A.

(3) Visual emissions from the #2 Reformer Heater shall not exceed five percent opacity for more than three minutes in any consecutive 60-minute period as determined by Washington State Department of Ecology Method 9A.

(4) The #2 Reformer Heater shall combust only gaseous fuels.

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Revision a: Reformat for AOP cleanup.

Revision b: Revise the 160 ppm H₂S, 3-hour average limit to 162 ppm H₂S, 3-hour average. Revise the 90 ppm H₂S calendar month average limit to 50 ppm, 24-hour average.

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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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #298a

Project Summary: Approval of the Reid Vapor Pressure (RVP) Phasedown Project designed to reduce the RVP of gasoline by removing butane.

Approved Emission Units:
- Process equipment modifications at the Crude and Vacuum Unit, Hydrocracker Unit, #1 Reformer Unit and Light Ends Unit
- A new Railcar Butane Loading Rack
- Two new Butane/Pentane Storage Spheres, #60 and #62 (30,000 barrel capacity each)

APPLICANT

BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Valerie Lagen

OWNER

BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:

Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC #298 dated December 4, 1990.

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
National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

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

1. The butane loading rack shall employ vapor balancing and during butane loading operations, vapors shall be collected and recovered or incinerated.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director, Engineering

Revision a: Reformat 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. 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.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 289b

Project Summary: Construct and operate a second cooling tower at the refinery.

Approved Emission Units:
- #2 Cooling Tower (750 MMBtu/hour nominal heat release rate)

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Contact: Ryan O'Larey, Env. Engineer

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 289a, issued April 12, 2012.

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)

Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions:

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.
(1) A hydrocarbon monitor shall be installed and operated on the #2 Cooling Tower in accordance with the manufacturer’s specifications.

Revision a: Reformat for AOP cleanup.

Revision b: Revise the project description to reflect the construction of two new cooling cells, with a combined additional heat release capacity of 250 MMBtu/hour.
Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) 273c

Project Summary: Retrofit the North Vacuum Heater with ultra-low NOx burners (ULNB) and increase heater capacity to 117 MMBtu/hour.

Approved Emission Units:
- North Vacuum Heater with six (6) ULNB rated at 117 MMBtu/hour, cumulatively
- Equipment components installed within the Crude and Vacuum Unit as part of this project (valves and connectors)

<table>
<thead>
<tr>
<th>Owner/Operator</th>
<th>Facility Name and Location</th>
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<tbody>
<tr>
<td>BP Cherry Point Refinery</td>
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<tr>
<td>4519 Grandview Road</td>
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<tr>
<td>Blaine, WA 98230</td>
<td>Blaine, WA 98230</td>
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<tr>
<td>Contact: Sahil Patel</td>
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</tbody>
</table>

Permit History
- Upon completion of the project, this Order supersedes NWCAA OAC 273b issued November 18, 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.

New Source Performance Standards
- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart Ja - Standards of Performance for Petroleum Refineries

National Emission Standards for Hazardous Air Pollutants (NESHAP)
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Issuance of this Order is authorized by Northwest Clean Air Agency Regulation Section 300. The Owner/Operator must comply with the following restrictions and conditions¹:

1. Limit fuel combusted in the North Vacuum Heater to natural gas and refinery fuel gas.

2. Do not allow visual emissions from the North Vacuum Heater stack to exceed five percent (5%) opacity for more than three (3) minutes in any consecutive 60-minute period as determined by Department of Ecology Method 9A.

3. Do not allow carbon monoxide (CO) emissions from the North Vacuum Heater to exceed:
   a. 20.5 tons, 12-month rolling total

   Calculate and record CO emissions monthly using an emission factor of 0.0366 lb/MMBtu during normal operations, and an emission factor of 0.2925 lb/MMBtu during startup and shutdown.

4. Do not allow sulfur dioxide (SO₂) emissions from the North Vacuum Heater stack to exceed any of the following limits:
   a. 19.5 tons, 12-month rolling average
   b. 13.2 lb/hr, calendar day average

Demonstrate compliance with the limits in 4.a. and 4.b. by testing for total sulfur (TS) in the North Vacuum Heater fuel gas once per calendar month using ASTM Test Method D-5504, or alternative method approved in advance by NWCAA. Take a minimum of three samples at least one hour apart for each monthly sampling event.

In addition, verify ongoing compliance with the daily lb/hr limit in 4.b. by using the High Pressure (HP) or Low Pressure (LP) Flare continuous emission monitoring system (CEMS) as an indicator for TS in refinery fuel gas. If valid hourly TS concentration data in refinery fuel gas as measured by the HP or LP Flare CEMS rises above 800 ppmv, calculate hourly emissions on a calendar day average with valid data from the HP or LP Flare CEMS.

Or, as an alternative to monthly TS analysis and the SO₂ mass emission rate determination outlined above:

Install, certify, calibrate, maintain, and operate a CEMS to measure and record the TS content of fuel gas combusted in the North Vacuum Heater. The CEMS must meet

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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.
appropriate performance specification and data quality assurance procedures as approved by NWCAA in writing, NWCAA Section 367, and NWCAA Appendix A.

Assume 100% conversion of TS in fuel gas to SO₂ at the North Vacuum Heater stack after combustion, unless an alternative methodology is approved in writing by NWCAA.

5. Do not allow hydrogen sulfide (H₂S) content of fuel combusted in the North Vacuum Heater to exceed any of the following limits:
   a. 162 ppmv, 3-hour rolling average
   b. 50 ppmv, 24-hour rolling average

Determine compliance with this condition by installing, calibrating, maintaining, and operating a CEMS to measure H₂S in North Vacuum Heater fuel gas. The monitor must meet the appropriate requirements of 40 CFR 60 Subpart Ja, 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.

6. Do not allow nitrogen oxide (NOₓ) emissions from the North Vacuum Heater to exceed the following applicable limits based on operating mode duration at any time, including startup and shutdown.

   While operating in balanced (forced) draft mode, comply with one of the limits in 6.a., and the limit in 6.b.
   a. 60 ppmvd NOₓ at 0% oxygen, determined daily on a 30-day rolling average basis
      or
      0.060 lb/MMBtu (HHV), determined daily on a 30-day rolling average basis
   b. 7.0 lb/hr, based on a calendar day average

   While operating in natural draft mode for 30 or more consecutive days, comply with one of the limits in 6.c., and the limit in 6.d.
   c. 40 ppmvd NOₓ at 0% oxygen, determined daily on a 30-day rolling average basis
      or
      0.040 lb/MMBtu (HHV), determined daily on a 30-day rolling average basis
   d. 4.7 lb/hr, based on a calendar day average

   While operating in natural draft mode for fewer than 30 consecutive days, comply with one of the limits in 6.a., and the natural draft mode mass emission rate limit in 6.d.

Determine compliance with this condition by installing, calibrating, maintaining, and operating a CEMS to measure NOₓ and O₂ in North Vacuum Heater exhaust. The monitor must meet the appropriate requirements of 40 CFR 60 Subpart Ja, 40 CFR 60 Appendices B and F, NWCAA Section 367, and NWCAA Appendix A.
Determine the F-factor of the fuel gas stream no less frequently than once per calendar week according to the monitoring requirements in 40 CFR 60.107a(d)(1)-(4). When electing to comply with the heating value based limits in 6.a. and 6.c., determine the F-factor of the fuel gas stream no less frequently than once per day according to the monitoring requirements in 40 CFR 60.107a(d)(1)-(4).

7. Do not allow emissions of particulate matter (PM$_{10}$, and PM$_{2.5}$, filterable and condensable) from the North Vacuum Heater to exceed:

a. 1.2 lb/hr

Conduct an initial source test on the North Vacuum Heater within 120 days of initial firing. Thereafter, conduct source testing within 36 months of the most recent test. If three (3) consecutive source tests demonstrate emissions of 50% or less than the limit in 7.a., source testing frequency may be reduced to once every five (5) years. If a source test demonstrates emissions are greater than 50% of the limit in 7.a., source testing frequency reverts back to once every 36 months until three (3) consecutive tests demonstrate emissions of less than 50% of the limit.

Determine compliance with this condition by averaging three (3) test runs of at least 60-minutes each while firing the heater as close to its maximum capacity as practical. If the heater is fired at a rate that is less than 90% of its maximum capacity, explain the reason in the source test report. Perform all testing in accordance with 40 CFR 60 Appendix A, NWCAA Section 367, and NWCAA Appendix A. Use EPA Methods 5 and 202 unless an alternative is approved in advance by NWCAA.

8. Comply with the requirements of 40 CFR 60 Subpart GGGa for equipment components installed as part of the North Vacuum Heater project.

9. Maintain an operations and maintenance manual for the North Vacuum Heater ULNB and air preheater system on-site and readily available for review by NWCAA. Perform maintenance on the ULNB and air preheater system according to manufacturer recommendations and record maintenance activities.

10. Retain all records required by this Order for at least five (5) years from date of generation on-site and readily available for review by NWCAA.

11. Notify NWCAA in writing of post-project startup date of the North Vacuum Heater within fifteen (15) days of startup and include a reference to OAC 273c.
Revision a: CO limit removed from PSD permit (PSD-5), adjusted to reflect an updated AP-42 emission factor and added to the OAC at 16.6 tons per year.

Revision b: Reformat. Adjust CO limit from 16.6 to 27.7 tons per year to reflect an updated AP-42 emission factor. The revision adds the emission factor to the OAC and changes the emission limit to a cumulative 12-month rolling total with associated recordkeeping.

Revision c: Reformat OAC for AOP renewal. Update CO emission factor and mass emission limit. Addition of NO$_x$, SO$_2$, PM$_{10}$/PM$_{2.5}$, and air toxics BACT limits for installation of ULNB and higher heater firing capacity.
Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 211c

Project Summary: Construction of the #1 and #2 Calciners including ancillary green and calcined coke handling equipment. The Calciners are equipped with flue gas heat recovery steam generators that can be firing independent of calcining operations.

Approved Emission Units:
- #1 and #2 Calciners hearths with refinery fuel gas used for supplemental firing.
- Green and calcined coke handling equipment.

APPLICANT
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Scott Inloes

OWNER
BP West Coast Products, LLC
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:
Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Permit History
- As of the date of issuance, this Order supersedes NWCAA OAC 211 issued October 26, 1977, OAC 211a issued November 17, 1977, and OAC 211b issued December 16, 1977.

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 J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems
As authorized by the Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. Particulate emissions shall not exceed 60 tons per calendar month, and sulfur dioxide emissions shall not exceed 2,354 pounds per hour, calendar month average, as a cumulative total from the following emission units:
   (a) Crude Heater (10-1401)
   (b) South Vacuum Heater (10-1451)
   (c) North Coker Charge Heater (12-1401-01)
   (d) South Coker Charge Heater (12-1401-02)
   (e) Naphtha HDS Charge Heater (11-1401)
   (f) Naphtha HDS Stripper Reboiler (11-1402)
   (g) #1 Reformer Heater (11-1403, 4, 5, 6)
   (h) #1 Diesel HDS Charge Heater (13-1401)
   (i) #1 Diesel HDS Stabilizer (13-1402)
   (j) #1 Hydrogen Plant North Reforming Furnace (14-1401-01)
   (k) #1 Hydrogen Plant South Reforming Furnace (14-1401-02)
   (l) Hydrocracker 1st Stage Reactor Heater, (R-1) (15-1401)
   (m) Hydrocracker 2nd Stage Reactor Heater (R-4) (15-1402)
   (n) Hydrocracker 1st Stage Fractionator Reboiler (15-1451)
   (o) Hydrocracker 2nd Stage Fractionator Reboiler (15-1452)
   (p) Sulfur Recovery Complex Incinerator (17-1481)
   (q) Low Pressure Flare
   (r) High Pressure Flare
   (s) #1 and 2 Calciners (Stack #1)

2. Compliance with Condition 1 of this Order shall be demonstrated by maintaining a monthly record of particulate (ton/calendar month) and sulfur dioxide (lb/hour, calendar month average) emissions. The record shall include emissions from each subject emission unit, the cumulative total for all subject emissions units, and the basis for estimating the emission rates. The monthly record shall be available for review by the NWCAA within 30 days after the close of the reported calendar month.

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Revision a: Establish refinery-wide SO2 and particulate limits
Revision b: Revise the refinery-wide particulate limit.
Revision c: Reformat for AOP Cleanup.

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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.