northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: October 26, 1977
Revision a: November 17, 1977
Revision b: December 16, 1977
Revision c: September 18, 2012

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 Calciner 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 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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

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.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Establish refinery-wide SO_2 and particulate limits

Revision b: Revise the refinery-wide particulate limit.

Revision c: 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
AIR POLLUTION AUTHORITY

Representing Island, Skagit & Whatcom Counties

1600 South Second Street, Mount Vernon, WA 98273-5202 ❖ (360) 428-1617 ❖ Fax (360) 428-1620 ❖ http://www.nwair.org

Original Issuance: January 14, 1983
Revision A: February 2, 1995
Revision B: November 18, 2004

Northwest Air Pollution Authority hereby issues
Order of Approval to Construct (OAC) #273b

Project Summary: Construct and operate a 77 MMBtu per hour gas fired North Vacuum Heater.

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

FACILITY LOCATION:

4519 Grandview Road, Blaine, Washington

NWAPA ID: 011-V-W

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

1. Carbon monoxide emissions from the North Vacuum Heater shall not exceed 27.7 tons per cumulative 12-month rolling total.

2. The facility shall maintain monthly records of carbon monoxide emissions from the North Vacuum Heater for each previous rolling 12-month period. These records shall be maintained on-site for a period of no less than five years.

3. An emission factor of 0.0823 lb/MMBtu shall be used to calculate carbon monoxide emissions from the North Vacuum Heater. This emission factor may be revised if more accurate emission factor information becomes available. Any change in the emission factor shall be mutually agreed upon by BP and the NWAPA and incorporated into this OAC with a corresponding change in the mass emission limit contained in condition 1.

Dan Mahar, PE Permitting Engineer	Lynn Billington, PE Reviewing Engineer	James Randles Director

BP Cherry Point Refinery, N. Vacuum Heater
OAC #273b 11/18/04

Revision A (Rev. 1): 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.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: August 23, 1990
Revision a: April 12, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #289a

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

Approved Emission Unit:

- #2 Cooling Tower (500 MMBtu/hour nominal heat release rate)

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 #289 dated August 23, 1990.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart 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[i]:

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

Daniel A. Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Reformat for AOP Cleanup.

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original issuance: December 4, 1990

Revision a: April 30, 2012

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
- 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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

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

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.

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 14, 1985

Revision a: May 3, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 305a

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)

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 305 issued November 14, 1985.
- Prevention of Significant Deterioration (PSD) permit PSD-7 was issued for this project by the Washington State Department of Ecology on March 13, 1986.

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 - 40 CFR Part 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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
- 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
- Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

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

1. The #2 Reformer Heater shall not exceed 340 MMBtu/hour, higher heating value (HHV).
2. Hydrogen sulfide (H_2S) in the fuel gas combusted in the #2 Reformer Heater shall not exceed;
   a. 160 ppm for any three-hour average, and
   b. 90 ppm based on a calendar month average.
3. Continuous compliance with Condition 2 of this Order shall be determined by operating a certified continuous emission monitoring system (CEMS) for hydrogen sulfide (H_2S) in the fuel gas combusted in the #2 Reformer Heater. 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.
4. Visual emissions from the #2 Reformer Heater shall not exceed 5% opacity for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A.
5. The #2 Reformer Heater shall combust only gaseous fuels.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Reformat for AOP cleanup.

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 8, 1992

Revision a: May 3, 2012

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A - General Provisions
- 40 CFR 61 Subpart FF – National Emission 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 Petroleum Refineries

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

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

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Reformat for AOP cleanup.

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 14, 1992
Revision A: June 04, 1993
Revision B: April 11, 1994
Revision C: October 19, 1999
Revision D: June 28, 2002
Revision E: May 10, 2010

Northwest Clean Air Agency (NWCAA) hereby issues **Order of Approval to Construct (OAC) #351e**

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. Nitrogen oxides (NOx) will be controlled through low NOx burners and flue gas recirculation.

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

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC #351 issued January 14, 1992, OAC #351a issued June 4, 1993, OAC #351b issued April 11, 1994 and OAC #351c issued October 19, 1999.
- Conditions of this Order shall become valid upon startup of the #4 Boiler following completion of the flue gas recirculation modification project and, upon that date, NWCAA OAC #351d issued June 28, 2002 is superseded.

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 J – Standards of Performance for Petroleum Refineries

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- 40 CFR Part 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart 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:

#4 Boiler

1. Visual emissions from the boiler stack shall not exceed five percent (5%) opacity for more than six consecutive minutes in any hour as measured by 40 CFR 60 Appendix A, Method 9.

2. The boiler shall burn only natural gas or refinery gas having an H_2S content of less than 162 ppm, based on a 3-hour rolling average. Compliance shall be determined by operating a continuous emissions monitor system (CEMS) for H_2S 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 limits;

   a. 33 (3.3×10^1) ppm by volume, dry basis, corrected to 3% percent oxygen, 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.

4. Compliance with Condition 3 of this Order shall be determined within 90 days of startup of the #4 Boiler following modification of the flue gas recirculation system by conducting an initial source test. The test shall be conducted at no less than 90% load and in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 3A, 4, and 7E, NWCAA Section 367 and NWCAA Appendix A. A fuel gas composition analysis shall be performed on gas being combusted during the test to determine the appropriate F-factor used in the Method 19 calculations.

5. Within 180 days of startup of the #4 Boiler following modification of the flue gas recirculation system, compliance with Condition 3 of this Order shall be determined by operating a certified CEMS for nitrogen oxides and oxygen. 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.

6. Carbon monoxide (CO) from the #4 Boiler shall not exceed the following emission limit;

   a. 15.9 (1.59×10^1) lb/hour.

7. Compliance with Condition 6 of this Order shall be determined within 90 days of startup of the #4 Boiler following modification of the flue gas recirculation system by conducting an initial source test. Subsequent source testing to demonstrate ongoing compliance shall be conducted at least once every 12 months. Source testing shall be conducted at no less than 90% load and in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 3A, 4 and 10, NWCAA Section 367 and NWCAA Appendix A.

8. 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.

9. Submit calendar month total NOx emissions from the #4 Boiler on monthly emission reports.

10. Provide written notice of the startup date of the #4 Boiler following completion of the flue gas recirculation modification project. This notification shall be received by the NWCAA no later than 14 days after boiler startup.

<u>Hydrocracker Unit 1st Stage Factionator Reboiler</u>

11. A cotemporaneous decrease in NOx emissions of at least 27 tons per year shall be realized by installation of low-NOx burners on the Hydrocracker Unit 1st Stage Factionator Reboiler. The refinery shall document the decrease by a source emission test for NOx in conformance with EPA Method 7A or 7E.

Dan Mahar, P.E.
Permitting Engineer

Mark Buford, P.E.
Assistant Director

Revision A: Eliminated requirement on maximum steam production and testing requirements for PM_{10}, VOC, and SO_2.

Revision B: Due to results of source emission test results for NOx and CO the emission concentration requirement for NOx was deleted and the requirement for a CO continuous emission monitor was removed.

Revision C: Removed CO emission limit and monitoring requirement based on decreased CO emissions resulting from burner changeout.

Revision D: Removed reference to CO in Condition 7, which was removed in previous revisions. Add condition for monthly reporting of NOx from the #4 Boiler.

Revision E: Reformat and reword conditions for AOP cleanup. Revise NOx conditions to provide creditable consent decree reductions attributed to the flue gas recirculation modification project. Add CO conditions and a startup notice.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tol 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: July 30, 1992

Revision a: May 15, 2012

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[i]:

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.

[i] 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.

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: December 12, 1994
Revision a: September 27, 1996
Revision b: October 24, 1996
Revision c: December 12, 2001
Revision d: July 9, 2012

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

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 tanks with liquid mounted primary seals, Tank 72 (20,000 barrel capacity)

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 527 issued December 12, 1994, OAC 527a issued September 27, 1996, OAC 527b issued October 24, 1996, and OAC 527c issued December 12, 2001.

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

New Source Performance Standards

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- 40 CFR 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- 40 CFR 60 Subpart XX- Standards of Performance for Bulk Gasoline Terminals
- 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 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[1]:

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.
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 biennially by conducting emission testing according to EPA Method 25 or another method approved by the Control Officer. Thirty days advance notice is required. The initial performance test shall be conducted within 90 days of startup.
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, the vapor collection system, the vapor processing system, and each loading rack handling 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 liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank exceeding 4,500 Pascals (450 mm of water) during product 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.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

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.

[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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 3, 1996
Revision a: February 26, 1996
Revision b: December 8, 2000
Revision c: March 17, 2003
Revision d: July 9, 2012

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 Reformer Unit to concentrate benzene and remove from gasoline blending components.

Approved Emission Units:

- Process equipment modifications at the #1 Reformer 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

- As of the date of issuance, this Order supersedes OAC 562 issued January 3, 1996, OAC 562a issued February 26, 1996, OAC 562b issued December 8, 2000 and OAC 562c issued March 17, 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.

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart GGG - 40 CFR Part 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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- 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[1]:

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.

[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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: August 13, 1997

Revision a: August 8, 2002

Revision b: July 9, 2012

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 Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

As authorized by 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: May 1, 1998

Revision a: July 9, 2012

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 GGG - 40 CFR Part 60 - Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A - General Provisions

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- 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.

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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: December 7, 1998
Revision a: September 18, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 660a

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 Unit:

- 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.

APPLICANT	OWNER
BP Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230 NOC Contact: Scott Inloes	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 660 issued December 7, 1998, and NWCAA Regulatory Order 011 issued May 23, 1995.

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 (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

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

1. Emissions of sulfuric acid mist (H_2SO_4) shall not exceed 15.0 pounds per hour. Compliance with this condition shall be determined by annual source testing conducted

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

2. Emissions of SO_2 from the #1 and 2 Calciner stack shall not exceed 35 ppmv corrected to 7% O_2, 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 annually by conducting visual observations of the stack by a certified opacity observer for no less than 60 consecutive minutes. A record of each observation shall be maintained on site.

4. Monthly reports shall be submitted to the NWAPA within 30 days of the end of the previous calendar month that include the following information.
   A. SO_2 emitted from the #1 and 2 Calciner stack per consecutive 12-month rolling total.
   B. The highest calendar day average SO_2 concentration in the #1 and 2 Calciner stack as ppmv corrected to 7% O_2.

Dan Mahar, P.E.
Permitting Engineer

Mark Buford by Mark Hamilson
Mark Buford, P.E.
Assistant Director

Revision a: Reformat and revise 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original issuance: April 13, 1999

Revision a: October 27, 2008

Revision b: September 18, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 689b

Project Summary: Modifications to the Delayed Coker Unit and #1 and 2 Calciner Unit to increase the calcined coke production rate from 28 to 38 tons per hour for each hearth. The modifications include increasing the firing capacity of the two Delayed Coker Heaters and replacing the four Delayed Coke drums with larger drums. Retrofit the two Delayed Coker Heaters with staged combustion air and flue gas recirculation (FGR) and retrofit the South Vacuum Heater low-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)
- Low-NOx burner retrofit of the South Vacuum Heater (222 MMBtu/hour nominal heat input capacity)
- Modifications to the 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)

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 689 issued April 13, 1999, OAC 689a issued October 27, 2008, and the Particulate Bubble Regulatory Order issued June 13, 1984.

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 (NSPS)

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

- 40 CFR 63 Subpart A – General Provisions
- 40 CFR 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

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

[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.

1.0 Emission Standards

Comply with the following emission limits and standards.

Cond.	Unit	Pollutant	Emission Limit or Standard	Averaging Period	Underlying Requirement	Maximum Emissions, Cumulative 12-Month Rolling
1.1.1	North and South Coker Charge Heaters	NO_X	15.2 lb/hr/heater		BACT	66 tons/heater
1.1.2		SO_2	14.9 lb/hr/heater		BACT	66 tons/heater
1.1.3		CO	4.28 lb/hr/heater		BACT	19 tons/heater
1.1.4		Opacity	5% EPA Method 9	6 minute, consecutive	BACT	
1.2.1	#1 & 2 Calciners (Stack #1)	NO_X	325 ppmvd, @ 7% O_2	calendar day	BACT	509 tons
1.2.2		SO_2	35 ppmvd @ 7% O_2[2]	calendar day	OAC 660a	175 tons
1.2.3		PM_{10}			PSD Threshold	34 tons
1.2.4		H_2SO_4	62 mg/dscf @ 7% O_2	calendar day	PSD Threshold	39 tons
1.2.5		Opacity	20% Ecology Method 9B	6 minute aggregate	BACT	
1.3.1	Vacuum Tail Gas[3] prior to combustion in any device	H_2S	80% reduction in H_2S concentration		WAC 173-400-113	
1.4.1	Coker Fuel Gas[4]	H_2S	50 ppmvd	calendar day	BACT	

[2] Existing emission limit
[3] Vacuum Tail Gas means Vacuum Tower and Vacuum Diesel Fractionator tail gases generated in the Crude and Vacuum Unit
[4] Coker Fuel Gas means refinery fuel gas supplied to North and South Coker Charge Heaters

2.0 Testing and Monitoring

Compliance shall be determined by the following test and monitoring methods. Source tests shall be conducted under normal operating conditions. Each source test shall consist of three separate runs and the arithmetic mean of the three test runs shall be used to determine compliance. Source tests and continuous emissions monitoring systems (CEMS) shall be compliant with the requirements of NWCAA Regulation Appendix A.

Cond.	Emission Unit	Pollutant	Monitoring Method
2.1.1	North and South Coker Charge Heaters[5]	NO_x	Biennial source test using EPA Method 7A or 7E
2.1.2		SO_2	Biennial source test using EPA Method 6 or 6C or fuel gas analysis
2.1.3		CO	Biennial source test using EPA Method 10, 10B or approved alternative
2.2.1	#1 & 2 Calciners (Stack #1)	NO_X	CEMS
2.2.2		SO_2	CEMS
2.2.3		PM_{10}	Operate in accordance with the #1 & 2 Calciner Monitoring Plan dated October 7, 1999.
2.2.4		H_2SO_4	Operate in accordance with the #1 & 2 Calciner Monitoring Plan dated October 7, 1999.
2.3.1	Vacuum Tail Gas	H_2S	CEMS demonstrating ongoing compliance with the H_2S limit of 40 CFR 60 Subpart J.
2.4.1	Coker Fuel Gas	H_2S	CEMS

3.0 Reporting

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.

Cond.	Process Unit	Pollutant	Report
3.2.1	#1 & 2 Calciners (Stack #1)	NO_x	ppmvd @ 7% O_2, monthly highest calendar day average
3.2.2		SO_2	ppmvd @ 7% O_2, monthly highest calendar day average
3.3.1	Vacuum Tail Gas	H_2S	ppmvd, monthly highest 3-hour rolling average
3.4.1	Coker Fuel Gas	H_2S	ppmvd, monthly highest 3-hour rolling average

[5] Performance tests only required on one of two heaters

Dan Mahar, P.E.
Environmental Engineer

Mark Buford by Mark Asmundson

Mark Buford, P.E.
Assistant Director

Revision a: Convert the Delayed Coker Charge Heaters NOx, SO_2 and CO emission limits to lb/hour, and lower the annual SO_2 emission limit accordingly.

Revision b: Revise for AOP Cleanup including converting the H_2SO_4 limit to mg/dscf.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 26, 2000
Revision a: May 3, 2001
Revision b: July 9, 2012

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

- As of the date of issuance, this Order supersedes NWCAA OAC 437 issued June 7, 1993, OAC 716 issued January 26, 2000, and OAC 716a issued May 3, 2001.

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

New Source Performance Standards (NSPS)

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR 61 Subpart A - General Provisions
- 40 CFR 61 Subpart BB – National Emission Standard for Benzene Emissions from Benzene Transfer Operations
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart Y - National Emission Standards for Marine Tank Vessel Loading Operations
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries 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 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.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: June 2, 2003
Revision a: March 24, 2004
Revision b: July 9, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 814b

Project Summary: Clean Gasoline Project ("Isom Project") is comprised of constructing a new Isomerization process unit and construction 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.

Approved Emission Units:

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

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 814 issued June 2, 2003, and OAC 814a issued March 24, 2004.
- Prevention of Significant Deterioration permit PSD-02-04 Amendment 1 was issued for the project by the Washington State Department of Ecology on April 20, 2005.

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

New Source Performance Standards (NSPS)

- 40 CFR 60 Subpart A - General Provisions

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- Subpart Db - Standards of Performance for Industrial-Commercial-Institutional 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 A - General Provisions
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations
- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries Petroleum Refineries
- 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

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 #5 Boiler and Isomerization IHT Heater shall combust only natural gas and/or refinery fuel gas.

2. Visible emissions from either the #5 Boiler or Isomerization IHT Heater shall not exceed an average opacity of five percent (5%) in a consecutive six minute period as determined by EPA Method 9.

3. Fuel combusted in the either the #5 Boiler or Isomerization IHT Heater shall not exceed any of the following hydrogen sulfide (H_2S) concentration limits.

   a. 162 ppm, 3-hour rolling average,

   b. 50 ppm, 24-hour rolling average.

   Ongoing compliance with this condition shall be determined by operating a continuous H_2S monitoring system that is installed, and operated in accordance with 40 CFR 60 Subpart J, Subpart A and Appendix F, and NWCAA Section 367 and Appendix A.

4. Vacuum tower and vacuum diesel fractionator tail gases (vacuum tail gas) generated in the Crude and Vacuum Unit shall not exceed 500 ppmv H2S based on a 3-hour rolling average prior to combustion in any device. Compliance with this condition shall be determined by operating a continuous emission monitor system (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. The following provisions shall be in effect for valves and pumps that have the potential to leak volatile organic compounds and or hazardous organic pollutants that have been installed in support of this project.

a. Leak Detection and Repair (LDAR) shall occur no less frequently than quarterly.

b. BP shall utilize the following leak definitions unless required to use a lower leak definition.

    1. 500 ppm for block valves and controls

    2. 2,000 ppm for pumps

BP shall record, track, repair and monitor all leaks greater than the leak definitions in Condition 5(b) of this Order but will have thirty (30) days to make repairs on and remonitor leaks that are greater than the leaks defined in Condition 5(b) of the Order and less than the applicable regulatory leak definition of 40 CFR 60 Subpart GGG.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

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.

[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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 13, 2003

Revision a: October 27, 2008

Revision b: July 17, 2012

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 847b

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 Unit:

- Hydrocracker 2nd Stage Fractionator Reboiler with low-NOx burners

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 847 issued November 13, 2003, and OAC 847a issued October 27, 2008.

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

New Source Performance Standards (NSPS)

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

2. Visible emissions from the reboiler shall not exceed 5 percent (5%) opacity for more than three minutes in any sixty-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 the following limit:

   a. 0.07 lb/MMBtu (HHV), 1-hour average

   Compliance with this condition shall be determined by conducting a source test by no later than December 31, 2012, and at least once every thirteen months thereafter. Compliance shall be determined by the average of three consecutive 60-minute test runs. During testing the reboiler shall be fired at a rate of 165 MMBtu/hour or higher (90% of the permitted capacity) unless an alternative firing rate is approved in advance by the NWCAA. 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.

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.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Correct the visual emissions compliance method and add a heat input limit.

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
AIR POLLUTION AUTHORITY

Representing Island, Skagit & Whatcom Counties

1600 South Second Street, Mount Vernon, WA 98273-5202 ❖ (360) 428-1617 ❖ Fax (360) 428-1620 ❖
http://www.nwair.org

Original Issuance: December 1, 2003

Revisions: none

Northwest Air Pollution Authority hereby issues
Order of Approval to Construct (OAC) #850

Project Summary: The project will increase the incremental rate of vacuum gas oil (2600 bpd) that can be processed at the hydrocracker unit into additional jet and gasoline products.

APPLICANT

Walter Williamson
BP Cherry Point Facility
4519 Grandview Road
Blaine, WA. 98230

OWNER

BP West Coast Products LLC
4519 Grandview Road
Blaine, WA. 98230

FACILITY LOCATION:

4519 Grandview Road
Blaine, Washington

Regulations that apply are:

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

- 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. This Subpart provides regulatory instructions for cases where requirements of this Subpart overlap those of other applicable rules. See 40 CFR 63.640 (o) and (p). For convenience in both monitoring and recordkeeping, all project components are assumed to be in organic HAP service and thus subject to 40 CFR 63 Subpart CC.

WAC 173-400 113 Control for New Sources in attainment areas and unclassified areas and 173-460 Controls for New Sources of Toxic Air Pollutants

- Requires Best Available Control Technology for toxic air pollutants.

Best Available Control Technology for the project has been determined to be:

For toxics and Hazardous Air Pollutants (HAP) from equipment leaks – an ongoing leak detection and repair (LDAR) program as specified in applicable portions of 40 CFR 63 Subpart CC and as further defined in the conditions below of this Order.

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

1. Project components shall be subject to the applicable portions of 40 CFR 63 Subpart CC. The following provisions shall be in effect for valves that have the potential to leak hazardous organic pollutants and that have been installed in support of this project.
    - Leak Detection and Repair (LDAR) shall occur no less frequently than quarterly.
    - BP shall utilize the following leak definitions unless otherwise required to use a lower leak definition
        - 500 ppm for block valves and control valves
    - BP shall record, track, repair, and remonitor all leaks greater than the leak definitions in Condition 5(b) of this Order, but will have thirty (30) days to make repairs on and remonitor leaks that are greater than the leak definitions in Condition 5(b) of this Order and less than the applicable regulatory leak definition.

Lynn Billington
Lynn Billington, PE
Reviewing Engineer

James Randles
James Randles
Director

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: February 22, 2005
Revision a: October 26, 2005
Revision b: February 25, 2009
Revision c: July 21, 2011

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #890c

Project Summary: Construct and operate a second tail gas unit (#2 TGU) and make associated modifications to existing equipment at the Sulfur Recovery Unit (SRU) to facilitate its installation. The #2 TGU will provide process redundancy, improve sulfur recovery, and reduce acid gas flaring during #1 TGU maintenance activities. The Coker Blowdown Vapor Recovery project will provide SO_2 offsets for the purpose of PSD netting associated with this Sulfur Recovery Unit modification.

Approved Emission Units:
Sulfur Recovery Unit with a maximum elemental sulfur recovery capacity of 270 long tons per day (LTPD). This SRU is comprised of two Claus sulfur recovery units, two tail gas units, elemental sulfur storage pits and a caustic scrubber. 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

APPLICANT

Jeff Pitzer
Business Unit Leader
BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

NOC Contact: Valerie Lagen

OWNER

BP Cherry Point Refinery
4519 Grandview Road
Blaine, WA 98230

FACILITY LOCATION:

4519 Grandview Road, Blaine, Washington, 98230

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct #890c dated February 25, 2009, Condition II of NWCAA Regulatory Order #28 issued May 15, 2002, and OAC issued June 30, 1977, for construction of the #1 TGU at the SRU.

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

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

1. Supplemental fuel combusted in the second tail gas unit shall be limited to pipeline grade natural gas.

2. Visual emissions from the incinerator and #2 TGU stacks shall not exceed ten percent opacity for more than three minutes in any one hour period as determined by Department of Ecology Method 9A.

3. Sulfur dioxide emissions from the incinerator and #2 TGU stacks shall not exceed any of the following emission limits.

   a. 250 (2.50×10^2) ppm by volume, dry basis, corrected to zero percent oxygen, based on a 12-hour rolling average. The 12-hour rolling average shall be calculated based on corrected hourly averages for the twelve, most recent, consecutive clock hours (BACT limit).

   b. 1500 (1.50×10^3) 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 (CEM) installed, calibrated, maintained, and operated to measure sulfur dioxide and oxygen in each TGU 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, shutdown and malfunction events as defined in 40 CFR §63.2. The following conditions apply during startup, shutdown and malfunction events.

a. In accordance with 40 CFR 63.6(e)(3) (NESHAPS Subpart A - General Provisions), a Startup, Shutdown & Malfunction Plan (SSMP) shall be developed for the sulfur recover units and tail gas units, kept current, and followed during each startup, shutdown and malfunction event.

b. In accordance with 40 CFR 60.11 (NSPS Subpart A - General Provisions) and 40 CFR 63.6(e)(1) (NESHAPS Subpart A - General Provisions), emissions associated with startup, shutdown and malfunction events at the sulfur recover units and tail gas units shall be minimized in accordance with good air pollution control practices.

c. Startup, shutdown and malfunction events at the sulfur recover units and tail gas units shall be reported in accordance with the federal regulations cited in this condition, and reported in accordance with WAC 173-400-107 and NWCAA 340 & 341.

5. Total tons of sulfur dioxide 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 on each monthly emissions report.

6. Emissions from the TGU stack 2 shall not exceed;

   a. Sulfur dioxide (SO_2) – 24.0 (2.40 x 10) lb/hour – 40 CFR 60, Appendix A, Method 6C or 8

   Compliance with this condition shall be determined by conducting an annual source performance test at least once every 12 months. Test Methods 1 through 4 of 40 CFR 60, Appendix A shall be used in conjunction with the methods listed above. Any proposed alternative test methods shall be approved in advance by the NWCAA. All testing shall be done under maximum operating rates that are at, or above, 80% of full capacity. The source tests shall be conducted in accordance with NWCAA Section 367 and NWCAA Appendix A: Ambient Monitoring, Emission Testing, and Continuous Emission and Opacity Monitoring.

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. The plan shall be submitted to the NWCAA for review and approval within 120 days of initial startup. Thereafter, if the plan is revised, these revisions shall be submitted to NWCAA for review and approval prior to implementation.

8. Except as provided in condition 13, 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. Bypassing of the sulfur pit vapor recovery scrubbers for maintenance shall not exceed 240 hours per year per scrubber. 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 coker wet gas recovery compressor #12-1801. Compliance with this condition shall be demonstrated by;

   a. Continuously monitoring and recording the operating position of remote activated valve #HV-331 and intake pressure to coker wet gas recovery compressor #12-1801.

b. Following written standard operating procedures that assure that coker blowdown vapors are properly routed to coker wet gas compressor #12-1801, except;

   i. When the intake pressure to coker wet gas compressor #12-1801 is near its suction pressure.

   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 SO_2 emissions that would have otherwise been recovered.

10. When compressor 12-1801 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 stripper tanks must continue to be routed upstream of the 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 continuously 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. The elemental sulfur production rate of the Sulfur Recovery Unit shall not exceed 270 long tons per day based on a consecutive 12-month rolling average. The most recent 12-month rolling average shall be reported to the NWCAA on each monthly emissions report.

13. During periods when the incinerator or sulfur pit control device are taken off-line for maintenance and emissions from the sulfur pits and sulfur tank are no longer routed to the CEM equipped incinerator stack, the following alternative monitoring plan (AMP) shall be utilized to determine emissions from the sulfur pits.

    a. Once per shift, measure and record the vented scrubber overhead or pit vent stack emissions, as appropriate, with a colorimetric detector tube to determine H_2S and SO_2 concentrations in the vented gas.

    b. Once per shift, check and record the pressure drop across the north and south sulfur pits and the sulfur tank to ensure flow through the system. These pressure drops shall be continuously monitored with readouts available at the SRU control board.

    c. Report total mass emissions of H_2S and SO_2 in monthly emissions reports during periods when this AMP 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.

Dan Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Revise condition 7 and add condition 13 to provide an alternative monitoring plan for monitoring emissions from the sulfur pit and sulfur tank during periods when the #1 tail gas incinerator is off-line for maintenance.

Revision b: Revise the SO_2 limit in Condition 3 and add Condition 4 to clarify when the BACT limit applies. Update applicable CEM and source test requirements to reference NWCAA 367 and Appendix A. Delete the NOx, CO, H_2SO_4 and H_2S emissions limits in Condition 5 (testing completed) and add an annual test requirement for SO_2. Clarify the requirements for bypassing sulfur pit controls under Conditions 7 and 14. Remove one-time only Conditions 8.d. and 12. Add clarification regarding emission stacks and correct a citation typo in Condition 8.c. All condition revisions and deletions described herein are in terms of OAC #890a.

Revision c: Reduce the tpy SO_2 emission limit in Condition 5 and replace Condition 12 with an elemental sulfur production rate limit.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tol 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: March 03, 2005
Revision A: September 05, 2007
Revision B: January 28, 2009

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #892b

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.

APPLICANT

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

NOC Contact: Steve Mrazek

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

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

- For sulfur dioxide (SO_2) from the #2 DHDS Charge Heater is operation in compliance with 40 CFR 60 subpart J and a 50 ppm H_2S, 24-hour fuel gas limit.
- For nitrogen oxides (NOx) from the #2 DHDS Charge Heater is the application ultra-low NOx burner technology and a limit of 0.035 lb NOx/MMBtu.
- Carbon monoxide (CO) from the #2 DHDS Charge Heater is good combustion control and a limit of 70 ppm (0.080 lb/MMBtu).
- For fine particulate (PM-10) and volatile organic compounds (VOC) from the #2 DHDS Charge Heater is fuel selection, good combustion control and an opacity limit of 5%.
- For volatile organic compounds (VOC) from process equipment leaks is leak detection and repair (LDAR) in compliance with 40 CFR 60 subpart GGG and enhanced by lower leak definitions and quarterly monitoring for specific components consistent with the BP consent decree.
- For volatile organic compounds (VOC) from wastewater systems is operation in compliance with 40 CFR 60 subpart QQQ.

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

New Source Performance Standards

- 40 CFR 60 subpart A – General Provisions
- 40 CFR 60 subpart J – Standards of Performance for Petroleum Refineries
- 40 CFR 60 subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries
- 40 CFR 60 subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

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

- 40 CFR 63 subpart A – General Provisions
- 40 CFR 63 subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
- 40 CFR 60 subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

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 #2 DHDS Charge Heater shall be limited to pipeline grade natural gas and refinery fuel gas.

2. The #2 DHDS Charge Heater shall not exceed 35 MMBtu HHV per hour heat input on a 720-hour rolling average. BP shall 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 (5%) percent opacity for more than three minutes in any consecutive sixty-minute period as determined by Department of Ecology Method 9A.

4. The hydrogen sulfide (H_2S) content of fuel gas combusted in the #2 DHDS Charge Heater shall not exceed any of the following limits;

   a. 162 (1.62×10^2) ppm by volume, based on a 3-hour rolling average.

   b. 50 (5.0×10) ppm by volume, based on a 24-hour rolling average.

   Compliance with this condition shall be determined by a continuous emission monitor (CEM) installed, calibrated, maintained, and operated to measure hydrogen sulfide in the fuel gas. The monitor shall 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 from the #2 DHDS Charge Heater shall not exceed any of the following limits.

   a. Nitrogen oxides (NOx) – 0.035 lb/MMBtu – Appendix A, Method 7E

b. Carbon monoxide (CO) – 70 ppmvd @ 7% oxygen - Appendix A, Method 10

Compliance with this condition shall be determined by conducting an annual performance test for NOx and CO at least once every 13 months. Test methods 1 through 4 of 40 CFR 60, Appendix A shall be used in conjunction with the methods listed above. Any proposed alternative test method shall be approved in advance by the NWCAA. The test shall be conducted in accordance with NWCAA Section 367 and NWCAA Appendix A.

Performance testing shall be conducted 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. The firing rate that occurred during the test shall be recorded and included in the performance test report.

If the 720-hour rolling average firing rate of the heater exceeds by more than 20%, the firing rate recorded during most recent performance test, a new performance test shall be conducted within 90 days of the exceedance. The new test shall be conducted at a firing rate that is equal to, or greater than, the peak hourly operating rate measured during the exceedance period that required additional testing.

6. An operation and maintenance (O & M) manual shall be kept on site for the #2 DHDS Charge Heater that includes information on the O & M of the ultra-low NOx burner.

7. In addition to the requirements of 40 CFR 60 subpart GGG, the following provisions shall be in effect for valves and pumps that have the potential to leak volatile organic compounds or hazardous organic pollutants located in the #2 DHDS Unit.

   a. Leak Detection and Repair (LDAR) monitoring shall occur no less frequently than quarterly.

   b. BP shall utilize the following leak definitions unless otherwise required to use a lower leak definition;

      i. 500 ppm for block valves and control valves.

      ii. 2,000 ppm for pumps.

   c. BP shall record, track, repair, and remonitor all leaks greater than the leak definitions in Condition 7(b) of this Order, but will have thirty (30) days to make repairs on and remonitor leaks that are greater than the leak definitions in Condition 7(b) of this Order and less than the applicable regulatory leak definition.

Dan Mahar, P.E.	Mark Buford, P.E.	Lynn Billington, P.E.
Environmental Engineer	Assistant Director, Engineering	Director, Engineering

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.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 15, 2004

Revision a: July 9, 2012

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 Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

As authorized by 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 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

1600 South Second Street
Mount Vernon, WA 98273-5202
p: 360.428.1617
tf: 800.622.4627
fax: 360.428.1620
www.nwcleanair.org

Issuance: February 07, 2005

Revision A: November 01, 2005

Northwest Clean Air Agency (NWCAA) hereby issues
Order of Approval to Construct (OAC) #902a

Project Summary: South Vacuum Heater Improvement Project which includes retrofitting 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 (1.18×10^1) 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	Lynn Billington, PE	James Randles
Permitting Engineer	Reviewing Engineer	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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: March 31, 2006

Revision A: July 1, 2009

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #949a

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 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.

APPLICANT

Jeff Pitzer
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 98230

Permit History

- As of the date of issuance, this Order supersedes NWCAA Order of Approval to Construct #949 dated March 31, 2006

Note that in addition to other applicable rules and regulations, the #1 DHDS Unit is subject to applicable portions of the following federal regulations:

National Emission Standards for Hazardous Air Pollutants

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

1. Fuel combusted in the Charge Heater and Stabilizer Reboiler shall be limited to pipeline grade natural gas and refinery fuel gas.

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

3. Nitrogen oxides (NOx) from the Charge Heater shall not exceed the following emission limits.

   a. 0.040 (4.0×10^{-2}) lb/MMBtu based on a 24-hour rolling average, or

      If this limit is exceeded, the following mass emission rate limit shall be used to determine compliance.

   b. 1.9 (1.9×10^{0}) lb/hour based on a 24-hour rolling average

   The initial source test to quantify NOx emissions shall be conducted within 120 days of startup of the unit. Subsequent source tests shall be conducted at least once every three years and within one month of the anniversary month of the previous test.

   As an alternative to source testing, compliance with this condition may be determined by a continuous emission monitor (CEM) installed, calibrated, maintained, and operated to measure nitrogen oxides and oxygen. Each monitor shall meet the appropriate specifications of 40 CFR 60 Appendices B and F, NWCAA Section 367 and NWCAA Appendix A.

4. Carbon monoxide (CO) from the Charge Heater shall not exceed the following emission limit.

   a. 3.2 (3.2×10^{0}) lb/hour

   The initial source test to quantify CO emissions shall be conducted within 120 days of startup of the unit. Subsequent source tests shall be conducted at least once every three years and within one month of the anniversary month of the previous test.

5. Nitrogen oxides (NOx) from the Stabilizer Reboiler shall not exceed the following emission limits;

   a. 26 (2.6×10^{1}) ppm by volume, dry basis, corrected to seven percent oxygen, based on a 24-hour rolling average, or

      If this limit is exceeded, the following mass emission rate limit shall be used to demonstrate compliance.

   b. 2.2 (2.2×10^{0}) lb/hour based on a 24-hour rolling 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 367 and NWCAA Appendix A.

6. Carbon monoxide (CO) from the Stabilizer Reboiler shall not exceed the following emission limit.

   a. 3.8 (3.8×10^0) lb/hour

   The initial source test shall be conducted within 120 days of startup of the unit. Subsequent source tests shall be conducted at least once every three years and within one month of the anniversary month of the previous test.

7. General source test requirements

   a. Source testing shall be conducted while firing the Charge Heater or the Stabilizer Reboiler 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. Hourly firing rates (MMBtu/hour) under which testing is conducted shall be recorded and included in the final source test report.

   b. Source testing shall be conducted in accordance with NWCAA Section 367 and NWCAA Appendix A. Source testing Methods 1 through 4 of 40 CFR 60, Appendix A shall be used in conjunction with 40 CFR 60, Appendix A, Method 10.

   c. If the 720-hour rolling average firing rate of the Charge Heater or Stabilizer Reboiler exceeds, by more than 20%, the firing rate recorded during most recent source test, a new source test shall be conducted within 90 days of the exceedance. The new source test shall be conducted at a firing rate that is equal to, or greater than the peak hourly operating rate measured during the exceedance period that requires additional testing

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

9. The following provisions shall be in effect for new valves associated with the #1 DHDS Heater Reliability Project that have the potential to leak volatile organic compounds or hazardous organic pollutants.

   a. Leak Detection and Repair (LDAR) monitoring shall occur no less frequently than quarterly.

   b. BP shall utilize the following leak definitions unless otherwise required to use a lower leak definition;

      i. 500 ppm for block valves and control valves.

   c. BP shall record, track, repair, and remonitor all leaks greater than the leak definition in Condition 9(b) of this Order, but will have thirty (30) days to make repairs on and remonitor leaks that are greater than the leak definitions in Condition 9(b) of this Order and less than the applicable regulatory leak definition of applicable portions of 40 CFR 63 Subpart CC.

10. BP shall monitor and record the 720-hour average firing rates of the Charge Heater and Stabilizer Reboiler. These records shall be used to determine compliance with Condition 7.c. of this Order.

Dan Mahar, P.E. Environmental Engineer	Mark Buford, P.E. Assistant Director, Engineering	Lynn Billington, P.E. Director, Engineering

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-rolling average firing rate exceeds, by more than 20%, the firing rate recorded during the most recent test.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original issuance: August 09, 2006
Revision a: January 29, 2008
Revision b: April 21, 2011

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #966b

Project Summary: Retrofit the Hydrocracker 1st Stage Reactor Heater (R-1 Heater) with ultra-low nitrogen oxide 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. Nitrogen oxide (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:

- The Hydrocracker 1st Stage Reactor Heater with a heat input capacity of 120.9 MMBtu/hour HHV equipped with ultra-low nitrogen oxide burners
- Process equipment associated with the Hydrocracker 1st Stage Reactor Heater ULNB retrofit project

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

- As of the date of issuance, this Order supersedes NWCAA OAC #966 issued August 9, 2006, and OAC#966a issued January 29, 2008.

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

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

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

1. Fuel combusted in the Hydrocracker 1st Stage Reactor Heater shall be limited to natural gas and refinery fuel gas.

2. Heat input to the Hydrocracker 1st Stage Reactor Heater shall not exceed 120.9 MMBtu/hour HHV, based on a 30-day rolling average.

3. Visual emissions from the Hydrocracker 1st Stage Reactor Heater shall not exceed five (5%) percent 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 Reactor Heater shall not exceed the following emission limits;

   a. 26 (2.6×10^1) ppm by volume, dry basis, corrected to 7% oxygen, based on a 24-hour rolling average. Or, if this concentration based limit is exceeded, the following mass emission rate limit shall be used to demonstrate compliance:

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

   Continuous compliance with this condition shall be determined by a certified continuous emission monitoring system (CEMS) for nitrogen oxides and oxygen. 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.

5. Carbon monoxide (CO) from the Hydrocracker 1st Stage Reactor Heater shall not exceed the following emission limit:

   a. 5.4 lb/hour

   Periodic compliance with this condition shall be determined no less than annually, with source testing performed within no less than thirteen months of the previous test. Testing shall be performed under representative operating conditions and at a heater firing rate that corresponds to the operating condition of the Hydrocracker Unit on the scheduled test day. Compliance shall be determined by the average of three test runs conducted in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 3A, 4 and 10, and NWCAA Section 367 and Appendix A, unless an alternative test method is approved in advance by the NWCAA.

   Continuous compliance with this condition shall be determined using the emission factor in lb/MMBtu generated during the most recent source test and actual firing rates in MMBtu/hour of the heater.

6. An operating and maintenance (O & M) manual shall be maintained on site for the Hydrocracker 1st Stage Reactor Heater that includes information on O & M of the ultra-low NOx burners.

7. The following records for the Hydrocracker 1st Stage Reactor Heater 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 hourly, daily and 30-day rolling averages,
   b. NOx emissions from CEMS data in ppmvd corrected to 7% oxygen, as hourly and 24-hour averages,
   c. NOx emissions from CEMS data in lb/hour, as hourly and 24-hour averages, and
   d. CO emissions in lb/hour.

8. The following provisions shall be in effect for new valves associated with the Hydrocracker 1st Stage Reactor Heater UNLB Retrofit Project that have the potential to leak volatile organic compounds or hazardous organic pollutants.
   a. Leak detection and repair (LDAR) monitoring shall occur no less frequently than quarterly.
   b. BP shall utilize the following leak definitions unless otherwise required to use a lower leak definition:
      i. 500 ppm for block valves and control valves.
   c. BP shall record, track, repair, and remonitor all leaks greater than the leak definition in Condition 8(b) of this Order, but will have thirty (30) days to make repairs on, and remonitor leaks that are greater than the leak definitions in Condition 8(b) of this Order and less than the regulatory leak definition of applicable portions of 40 CFR 63 Subpart CC.

Daniel A. Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

Revision a: Corrected the EPA test method for CO.

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

northwest Clean Air agency

1600 South Second Street
360 428 1617
8006224627
360 428 1620

Original issuance: January 22, 2007

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #977

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

APPLICANT

Terry Golden
Refinery 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:

BP Cherry Point Refinery, #1 Reformer - 4519 Grandview Road, Blaine, Washington

Best Available Control Technology (BACT)

For volatile organic compounds (VOC) and hazardous air pollutants (HAP) from process equipment leaks, BACT has been determined to be a leak detection and repair program conducted in accordance with the work practice standards of 40 CFR 60 subpart VV enhanced by a lower leak definition and no less than quarterly instrument monitoring.

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

1. A source test shall be completed on the #1 Reformer Heater to establish an emission factor for nitrogen oxides in terms of pounds per MMBtu higher heating value (lb NOx/MMBtu HHV). The test shall be conducted within 120 days of startup of the #1 Reformer following installation of the recycle gas dryer. The test shall be conducted under representative operating conditions, and in accordance with EPA Reference Method 7E, NWCAA Regulation Section 367 and NWCAA Appendix A.

2. The following provisions shall be in effect for new valves associated with this project that have the potential to leak volatile organic compounds or hazardous air pollutants.

   a. Leak detection and repair (LDAR) instrument monitoring shall occur no less frequently than quarterly.

   b. BP shall utilize the following leak definitions unless otherwise required to use a lower leak definition;

i. 500 ppm for block valves and control valves.

c. BP shall record, track, repair, and remonitor all leaks greater than the leak definition in Condition 2(b) of this Order, but will have thirty (30) days to make repairs on, and remonitor leaks that are greater than the leak definition of this Order, and less than the regulatory leak definition of applicable portions of 40 CFR 63 Subpart CC.

d. Not withstanding the aforementioned conditions, the LDAR program shall be conducted consistent with the standards set forth in 40 CFR 60 subpart VV.

3. The NWCAA shall be notified in writing of the startup date of the #1 Reformer following installation of the recycle gas dryer. This notification shall be postmarked no later than 15 days after startup.

Dan Mahar, PE	Lynn Billington, PE	Mark Asmundson
Permitting Engineer	Reviewing Engineer	Director

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original issuance: March 06, 2007

Revision A: October 27, 2008

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #985a

Project Summary: Project involves replacing all six of the original 4,362 ft^2 "old" cells in the #3 Calciner Wet Electrostatic Precipitator (WESP) with three 11,652 ft^2 "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 ft^2.

APPLICANT

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

NOC Contact: Steve Mrazek

OWNER

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

FACILITY LOCATION:

#3 Calciner WESP

BP Cherry Point Refinery, 4519 Grandview Road, Blaine, Washington

Reasonably Available Control Technology (RACT)

- For fine particulate matter (PM-10) and sulfuric acid mist (H_2SO_4) has been determined to be a WESP designed and operated in accordance with the conditions of this OAC.

As authorized by the Northwest Clean Air Agency Regulation Section 300, this order is issued subject to the #3 Calciner WESP operating under following restrictions and conditions:

Emission limits

1. Sulfuric acid mist (H_2SO_4) shall not exceed any of the following emission limits.

   a. 50 (5.0×10^1) mg/m3, 60-minute rolling average

b. 18.3 (1.83×10^1) lbs/hour, 60-minute rolling average

2. Fine particulate mater (PM-10) shall not exceed the following emission limit.

   a. 0.010 (1.0×10^{-2}) grains per dry standard cubic foot corrected to seven percent oxygen, 60-minute rolling average

3. Visual emissions – opacity shall not exceed an average of twenty (20%) 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 ft^2/1,000 acfm, 60-minute rolling average. For the purpose of monitoring for compliance with this condition, the SCA shall be calculated as follows.

$$\text{SCA } (ft^2/1{,}000 \text{ acfm}) = \frac{\text{Square feet of the total collection area of operating cells}}{\text{actual cubic feet per minute (acfm) of stack flow}}$$

   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 (ft^2/1,000 acfm)

   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 (10) minutes.

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

Source Testing

10. The #3 Calciner WESP shall be source tested annually within 120 days of startup of the second "new" WESP cell, and thereafter, within eleven to thirteen months of the anniversary date of the previous test. 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/PM-10 – 40 CFR 60 appendix A, Test Methods 5 and 202

    b. H_2SO_4 – 40 CFR 60 appendix A, Test Method 8, or other test method approved in advance by the NWCAA

11. This OAC, and all conditions set forth herein, shall be applicable upon startup of the second "new" WESP cell.

12. This OAC hereby supersedes Regulatory Order #018 issued by the NWCAA on June 30, 1998.

13. Written notification of startup shall be submitted to the NWCAA within 15 days of commencing operation of the second "new" WESP cells. Written notice shall also be submitted within 15 days of commencing operation of the third "new" WESP cell.

Dan Mahar, P.E. Environmental Engineer	Mark Buford, P.E. Assistant Director, Engineering	Lynn Billington, P.E. Director, Engineering

Revision A: Correct typo in Condition 1.b. and add language to Condition 10.b. that allows an alternative test method for H_2SO_4 if approved in advance by the NWCAA.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 29, 2007
Revision a: January 3, 2008
Revision b: February 27, 2009
Revision c: May 20, 2013

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1001c

Project Summary: Replace utility Boilers #1 and #3, each rated at 330 MMBtu/hr higher heat 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 oxides of nitrogen (NOx).

Approved Emission Units:

- Two (2) 363 MMBtu/hr HHV capacity boilers (#6 and #7) with SCR for NOx control.

Owner/Operator	Facility Name and Location
BP Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230 Contact: James Verburg, Sr. Env. Engineer	BP Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230

Permit History

- As of the date of issuance, this Order supersedes NWCAA OAC 1001b issued February 27, 2009.

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

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 Volatile Organic Compound (VOC) Emissions from Petroleum Refinery Wastewater Systems

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

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

1. Fuel combusted in the boilers shall be limited to refinery fuel gas or natural gas.
2. Visual emissions from the boiler shall not exceed 5% opacity for more than three minutes in any one hour period as determined by Department of Ecology Method 9A.
3. In addition to the requirements of 40 CFR 60 Subpart Db (0.20 lb NOx/MMBtu, 30-day rolling average), NOx emissions shall not exceed the following emission limits:
    a. During periods of normal operation, as defined as firing the boiler at or above 18 MMBtu HHV/hour (5% capacity), 4.0 lb/hr based on a one-hour average.
    b. During periods of hot standby, as defined as firing the boiler below 18 MMBtu HHV/hour (5% capacity), 2.0 lb/hr based on a one-hour average.
4. Compliance with condition 3 shall be determined by installing NO_x 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 ppmdv corrected to 3% oxygen as a 24-hour average.
    a. 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 at three firing rates or an alternative method approved in advance by the NWCAA. The three firing rates will be in the ranges of 20-30%, 45-55% and 90% or greater or as close to the rated capacity during the compliance test as practical. If the high range firing rate is less than 90% of the rated capacity, the reason shall be explained in the test report.
    b. An initial compliance test shall be conducted within 60 days of achieving the maximum firing rate at which the boiler will be operated, but not later than 180 days after initial startup.
    c. Compliance tests shall be conducted annually. The tests shall be conducted no later than 13 months from the anniversary of the previous tests.
    d. Ammonia feed rate, NOx emissions, fuel consumption, oxygen and temperature shall be monitored and recorded during the tests.

[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.

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.

    a. An initial plan shall be submitted to the NWCAA at least 30 days prior to startup and shall include specific operating parameters.

    b. A final plan shall be submitted to the NWCAA within 60 days after conducting the initial ammonia compliance test and shall contain source test results and the established relationship between the boiler and SCR operating parameters and ammonia emissions. 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 will be assessed based on the annual source test results and may be amended and improved accordingly.

8. The following provisions shall be in effect for new valves associated with this project that have the potential to leak volatile organic compounds or hazardous air pollutants.

    a. Leak detection and repair (LDAR) instrument monitoring shall occur no less frequently than quarterly.

    b. Utilize the following leak definitions unless otherwise required to use a lower leak definition:

        i. 500 ppm for valves

    c. Record, track, repair, and remonitor all leaks greater than the leak definition in Condition 8(b) of this Order, but will have thirty (30) days to make repairs on, and remonitor leaks that are greater than the leak definition of this Order, and less than the regulatory leak definition of applicable portion of 40 CFR 63 Subpart CC for new sources.

9. The NWCAA shall be notified in writing of the startup date of the #6 and #7 boilers. This notification shall be postmarked no later than 15 days after startup date of each boiler.

10. The #1 and #3 boilers (330 MMBtu HHV/hour each) shall be decommissioned within twelve months of startup of either #6 or #7 boiler. The NWCAA shall be notified in writing of the decommissioning date of each boiler. Notifications shall be postmarked no later than 15 days after each decommissioning event.

Agata McIntyre P.E.

Agata McIntyre, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

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 pp, 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 DDDDD 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.

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: May 29, 2009

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

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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. Environmental Engineer	Mark Buford, P.E. Assistant Director, Engineering	FOR Lynn Billington, P.E. Director, Engineering

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: April 12, 2012

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 Stabilizer (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.

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP)

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

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

1. The Crude Heater and South Vacuum Heater shall combust 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 combust 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 combust gaseous fuel only.

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

Daniel A. Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

[i] 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
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 29, 2010

Revision a: March 13, 2014

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) 1064a

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 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 PM_{10} emissions.

Fugitive emissions from process equipment located at the #2 Hydrogen Plant and #3 DHDS Unit are subject to 40 CFR 60 Subpart GGGa. This new source performance standard requires the implementation of an enhanced leak detection and repair program at each unit that is considered equivalent to best available control technology.

Approved Emission Units:

- One (1) 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 nitrogen oxide burners (ULNB) and selective catalytic reduction (SCR).
- One (1) 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.

Owner/Operator	Facility Name and Location
BP Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230 Contact: Jim Verburg Senior Environmental Engineer	BP Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230

Permit History

As of the date of issuance, this Order supersedes NWCAA OAC 1064 issued November 29, 2010.

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy

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

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

- 40 CFR 63 Subpart A - General Provisions
- 40 CFR 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries, which states that wastewater streams subject to 40 CFR Part 60 Subpart QQQ only comply with Subpart CC. The regulation also references 40 CFR Part 60 Subpart VVa regarding equipment leaks.
- 40 CFR 63 Subpart EEEE - Organic Liquids Distribution
- 40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations

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

#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 absorption (PSA) residual off-gas.

3. Visible emissions from the SMR Furnace stack 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. 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

   b. 0.010 lb/MMBtu

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

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 within 180 days of startup of the SMR Furnace by operating a certified continuous emission monitoring system (CEMS) for nitrogen oxides stack concentration and oxygen 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 nitrogen oxides 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 within 180 days of startup of the SMR Furnace by operating a certified continuous emission monitoring system (CEMS) for carbon monoxide stack concentration and oxygen 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 carbon monoxide mass emission rates shall be determined as prescribed in Condition 14(b) of this order.

7. Emissions of sulfur dioxide (SO_2) from the SMR Furnace shall not exceed any of the following limits:

   a. 2.83 lb/hour, 24-hour rolling average

   b. 6.3 tons, 12-month rolling cumulative

   Continuous compliance with this condition shall be determined within 180 days of startup of the SMR Furnace by operating a certified continuous emission monitoring system (CEMS) for sulfur dioxide stack concentration and oxygen 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 sulfur dioxide 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

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 (NH_3) from the SMR Furnace shall not exceed any of the following limits;

   a. 10 (1.0×10^1) ppm by volume, dry basis, corrected to three percent oxygen, hourly average

   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 10 or 11 of this Order.

10. BP shall develop and implement an ammonia emissions monitoring plan. The plan shall establish a predictive relationship between the SMR Furnace operation, SCR parameters and ammonia emissions. The ammonia monitoring plan shall be submitted to the NWCAA at least 30 days prior to startup of the #2 Hydrogen Plant. A final plan shall be submitted to the NWCAA within 90 days after conducting the initial ammonia compliance test required under Condition 11 of this Order. The final plan shall contain source test results and the established relationship between the SMR Furnace operation, SCR parameters and ammonia emissions. 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 include a requirement to source test the SMR Furnace as soon as practical for ammonia using the test methods listed in Condition 11 as if parameter monitoring indicates that an ammonia limit may be exceeded due to a condition that cannot be corrected within 24 hours.

    The plan shall be reevaluated after each periodic source test for ammonia and shall be improved and revised accordingly with revisions submitted to the NWCAA within 90 days of source testing. 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 ammonia from the SMR Furnace stack.

11. An initial source test shall be conducted on SMR Furnace within 120 days of initial firing to demonstrate compliance with Conditions 4, 5, 6, 7, 8 and 9 of this Order. Thereafter, compliance with Conditions 4, 8 and 9 of this Order shall be demonstrated by conducting annual testing within eleven to thirteen months of the anniversary of the initial test. 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.

    All testing shall be conducted in accordance with 40 CFR 60 Appendix A, Methods 1, 2, 3A and 4, 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.

a. $PM_{2.5}$ - 40 CFR 60 Appendix A, Method 5 and Method 202, or US EPA Other Test Methods (OTM) 27 and 28

b. NOx - 40 CFR 60 Appendix A, Method 3A and Method 7E

c. CO - 40 CFR 60 Appendix A, Method 3A and Method 10, 10A or 10B

d. SO_2 - 40 CFR 60 Appendix A, Method 6C

e. VOC - 40 CFR 60 Appendix A, Method 18 or Method 25

f. Ammonia - BAAQMD Method ST-1B

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. The owner/operator shall 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. Exhaust flow rate in dry standard thousand cubic feet per hour (mscfh), 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. NOx, CO and SO_2 emissions from CEMS data in ppmvd at 3% oxygen, as hourly and 24-hour averages,

    d. NOx, 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 ammonia 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 (5%) opacity for more than three minutes in any consecutive sixty-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. The owner/operator shall 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 (5%) opacity for more than three minutes in any consecutive sixty-minute period as determined by Washington State Department of Ecology Method 9A.

22. The hydrogen sulfide (H_2S) content of fuel combusted in the #3 DHDS Charge Heater shall not exceed the following limit.

    a. 50 (5.0×10^1) ppm, 24-hour rolling average.

    The refinery fuel gas combusted in the #3 DHDS Charge Heater shall be continuously monitored for H_2S 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 fine particulate matter ($PM_{2.5}$, filterable and condensable) from the #3 DHDS Charge Heater shall not exceed any of the following limits:

    a. 0.28 lb/hour

b. 0.010 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.

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

    a. 0.98 lb/hour

    b. 0.035 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.

25. Emissions of carbon monoxide (CO) from the #3 DHDS Charge Heater shall not exceed any of the following limits.

    a. 1.03 lb/hour

    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 sulfur dioxide (SO_2) 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

    c. 3.2 tons, 12-month rolling cumulative

    Compliance with a. and b. of this condition shall be determined by the average of three test runs conducted during periodic source testing required under Condition 27 of this Order. Compliance with c. of this condition shall be determined by monthly total sulfur sampling of the fuel gas as required by Condition 28 of this Order.

27. An initial source test shall be conducted on the #3 DHDS Charge Heater within 120 days of initial firing to demonstrate compliance with Conditions 23, 24, 25 and 26 of this Order. Thereafter, testing shall be conducted within 36 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, Methods 1, 2, 3A and 4, 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.

    a. $PM_{2.5}$ - 40 CFR 60 Appendix A, Method 5 and Method 202, or US EPA Other Test Methods (OTM) 27 and 28

b. NOx - 40 CFR 60 Appendix A, Method 3A and Method 7E

c. CO - 40 CFR 60 Appendix A, Method 3A and Method 10, 10A or 10B

d. SO_2 - 40 CFR 60 Appendix A, Method 3A and Method 6C

28. Fuel gas combusted in the #3 DHDS Charge Heater shall be analyzed once per calendar month for total sulfur content using ASTM Test Method D-5504, or alternative method approved in advance by the NWCAA. A minimum of three samples shall be taken for each monthly sampling event and samples shall be taken at least one hour apart.

29. An operating and maintenance (O & M) manual for the #3 DHDS Charge Heater ultra-low NOx burners shall be maintained on site.

30. 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. Results of monthly sampling for total sulfur in fuel gas combusted in the heater.

31. SO_2 emissions from the heater in cumulative tons per each 12-month rolling period.

On September 15, 2010, the Agency issued a Mitigated DNS for the project, based on conditions enumerated in the MDNS and set forth below. The following mitigation measures (34 - 42) are conditions of approval imposed pursuant to RCW 43.21C.060 and Sections 155.8 and 155.13 of the Agency's Regulations. These conditions are enforceable under subsection G of NWCAA Regulation 155.8 and under the procedures of NWCAA Regulation Section 100. These conditions are not new source review approval conditions under Section 300 of the Agency's Regulations, RCW 70.94.152, the federal Clean Air Act or the Washington State Implementation Plan.

Mitigated Determination of Nonsignificance Terms and Conditions

32. AIR

    a. 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.

b. Within six months of the startup date of the Clean Fuels Project, BP West Coast Products, LLC (BP) shall pay in full to the Northwest Clean Air Agency (NWCAA) $4,376,226. This payment is calculated based on twenty percent of the estimated carbon dioxide emissions from new units associated with the Clean Fuels Project and the project's effect on emissions from existing units projected over a 30-year period, operating at one hundred percent capacity, multiplied by $1.60 per metric ton of carbon dioxide (455,857 tonnes CO_2/year x 20% offset mitigation x 30 years x 100% capacity x $1.60). The NWCAA shall be notified in writing within 14 days of the startup date of the Clean Fuels Project. The startup date shall be considered the day that the #2 Hydrogen plant is commissioned for commercial operation. The NWCAA agrees to use funds acquired from this Mitigated DNS condition on global climate change mitigation projects. Further, the NWCAA agrees to provide an open public process for allocation of funds and secure review and approval by the NWCAA Board of Directors for such allocations.

33. Water

a. To prevent and minimize the occurrence and potential consequences of oil spills, the applicant shall construct the Clean Fuels Project in accordance with the refinery's Integrated Spill Prevention, Control and Countermeasures (SPCC) Plan as well as the Oil Handling Facility Operations Manual (OHFOM) prepared under the applicable federal and state requirements as set forth in 40 CFR Part 112 and WAC 173-180.

b. To reduce potential stormwater runoff impact, the applicant shall ensure that necessary infrastructure improvements to the refinery's Wastewater Treatment Plant (WWTP) are implemented to address minor increases in stormwater volume resulting from the construction of the Clean Fuels Project.

34. Energy and Natural Resources

a. Potential impacts to energy and natural resources are mitigated in accordance with Condition 33 (Air) of this Order.

35. Aesthetics

a. 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.

36. Light and Glare

a. 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. The

lighting plan shall be submitted to the NWCAA prior to completing construction of the Clean Fuels Project.

Agata McIntyre P.E.

Agata McIntyre, P.E.
Chemical Engineer

Mark Buford, P.E.
Assistant Director

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.

---

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: November 29, 2010

Revision a: July 29, 2011

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.

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

- 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 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 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: April 9, 2012

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.

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 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].

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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 [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 conditions[i]:

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.

Daniel A. Mahar, P.E.
Environmental Engineer

Mark Buford, P.E.
Assistant Director

[i] 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

1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
tel 800.622.4627
fax 360.428.1620
www.nwcleanair.org

Original Issuance: January 22, 2013

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

Owner/Operator	Facility Name and Location
BP West Coast Products LLC Cherry Point Refinery 4519 Grandview Road Blaine, WA 98230 Contact: Scott Inloes, Senior Environmental Engineer	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
- 40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

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

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

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

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;

Serving Island, Skagit and Whatcom Counties
This paper is made from 100% post-consumer chlorine-free waste fiber using wind-generated energy.

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.