# DEPARTMENT OF ENVIRONMENTAL CONSERVATION

# AIR QUALITY CONTROL MINOR PERMIT

**Permit No.: AQ0231MSS03** Date: Preliminary – October 19, 2012
**Rescinds Minor Permit AQ0231MSS02**

The Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit No. AQ0231MSS03 to the Permittee listed below.

| | |
|---|---|
| **Owner and Operator:** | **Trident Seafoods Corporation (Trident)**<br>5303 Shilshole Avenue, NW<br>Seattle, WA 98107-4000<br>(206) 783-3818 |
| **Permittee:** | **Same as Owner and Operator** |
| **Stationary Source** | **Akutan Seafood Processing Facility (Akutan)** |
| **Location:** | Latitude 54˚ 08′ 00′′ North; Longitude 165˚ 47′ 00′′ West<br>UTM Zone 3 - 448,591 m East; 5,998,283 m North |
| **Permit Contact:** | Joseph T. Plesha (206) 783-3818 |
| **Permit Action:** | Revision to the Used Oil Authorization, Fish Oil Authorization, and Fuel Sulfur Limit |

This permit action requires a permit under 18 AAC 50.508(6) to revise or rescind terms and conditions of Title I permits. The permit satisfies the obligation of the Permittee to obtain a minor permit under 18 AAC 50.

The Department authorizes the Permittee to operate under the terms and conditions of this permit, and as described in the original permit application and subsequent supplements listed in Section 8, except as otherwise specified in this permit.

The Permittee may not operate under the terms and conditions of this permit until the Department has issued a Title V permit that incorporates these terms and conditions.

John F. Kuterbach, Manager
Air Permits Program

# Table of Contents

# Abbreviations/Acronyms

AAC .....Alaska Administrative Code
AAAQS .....Alaska Ambient Air Quality Standards
ADEC .....Alaska Department of Environmental Conservation
AS.....Alaska Statutes
ASTM.....American Society of Testing and Materials
C.F.R. .....Code of Federal Regulations
EMS.....Environmental Management System
EPA .....US Environmental Protection Agency
NA .....Not Applicable
PSD.....Prevention of Significant Deterioration
SCR .....Selective Catalytic Reduction
SN.....Serial Number
TBD.....To Be Determined

## Units and Measures

bhp.....brake horsepower or boiler horsepower
gr./dscf.....grains per dry standard cubic feet (1 pound = 7,000 grains)
dscf .....Dry standard cubic foot
GPH.....gallons per hour
kW .....kilowatts[1]
MMBtu .....Million British Thermal Units
ppm.....Parts per million
ppmv.....Parts per million by volume
tpm .....Tons per month
TPH .....Tons per hour
TPY .....Tons per year
Wt%.....weight percent

## Pollutants

CO .....Carbon Monoxide
$H_2S$ .....Hydrogen Sulfide
$NO_X$ .....Oxides of Nitrogen
$NO_2$.....Nitrogen Dioxide
NO .....Nitric Oxide
PM-10.....Particulate Matter [as defined in 18 AAC 50.990(71)]
$SO_2$ .....Sulfur Dioxide
VOC .....Volatile Organic Compound [as defined in 18 AAC 50.990(121)]

[1] kW refers to rated generator electrical output rather than engine output

## *Section 1 General Terms and Conditions*

1. The Permittee shall select one of the five phases (Phase 0 through Phase 4) described in this permit for operating the Akutan stationary source.

    1.1 The Permittee shall notify the Department within 30 days of permit issuance of the selected phase.

    1.2 The Permittee may switch phases at their discretion, but only to a numerically higher phase (e.g., from Phase 2 to Phase 3). The Permittee may not switch to a numerically lower phase (e.g., from Phase 4 to Phase 3).

    1.3 The Permittee shall notify the Department within 30 days of switching to another phase.

    1.4 When operating under a given phase, the Permittee shall comply with all applicable provisions of that phase.

    1.5 The Permittee shall disconnect emission units not authorized for the selected phase from fuel source and the fuel line(s) capped.

    1.6 The Permittee shall not operate in more than one phase at a given time.

2. **Environmental Management System.** The Permittee shall:

    2.1 Operate Akutan in accordance with the air quality control provisions of the Department-approved Environmental Management System (EMS).

    2.2 Update the EMS to include management of new and revised air quality control obligations as set out in this minor permit within 60 days after the operating permit is revised to incorporate terms and conditions of this minor permit.

3. Unless otherwise noted, the Permittee shall submit all notifications and reports in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

# *Section 2 Emission Unit Inventory*

## Phase 0 Conditions

4. **During Phase 0,** the Permittee is authorized to operate the emission units described in Table 1, in accordance with the terms and conditions of this permit.

**Table 1 – Phase 0 Emission Unit Inventory**

| Unit | Unit Name | Unit Description | Rating/size | Install Date |
|---|---|---|---|---|
| 1 | Pollock Generator #4 | Caterpillar Model D3516B Low $NO_X$ Diesel Electric Generator, Serial Number (SN) 7RN00229 | 1,655 kW | 5/1/94 |
| 2a | Cod Generator #1 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00273 | 1,360 kW | 1/24/98 Mod 11/04 |
| 3a | Cod Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00274 | 1,360 kW | 1/24/98 Mod 11/04 |
| 4b | Pollock Generator #1 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 7RN01420 | 1,655 kW | 12/03 |
| 5a | Pollock Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00514 | 1,360 kW | 6/15/00 Mod 11/04 |
| 6a | Pollock Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8EM00253 | 1,240 kW | 11/1/99 Mod 5/26/05 |
| 7b | Cod Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 1GZ01229 | 1,360 kW | 11/03 Mod 6/3/05 |
| 8 | Pollock Boiler #1 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85166 | 16.74 MMBtu/hr | 1/15/90 |
| 9 | Pollock Boiler #2 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85165 | 16.74 MMBtu/hr | 1/15/90 |
| 10 | Cod Boiler #1 | Johnston 516 AC Steam Boiler, SN 4756 | 5.11 MMBtu/hr | 5/1/82 |
| 11 | Cod Boiler #2 | Johnston 516 AC Steam Boiler, SN 4757 | 5.11 MMBtu/hr | 5/1/82 |
| 12 | Fish Meal Drier | Pedar Halvorsen Furnace, SN#502511 | 34.6 MMBtu/hr | 7/96 |
| 23a | Boiler | Cleaver Brooks Model 200-500-150 Steam Boiler, SN L62902 | 21 MMBtu/hr | 10/96 |
| 24 | Boiler | Falcon Boiler, SN M8616 | 1.02 MMBtu/hr | 6/95 |
| 25[a] | Sealand Engine | Detroit Diesel Series 60 Diesel Electric Generator, SN 06R0096733 | 350 kW | 9/95 |
| 26 | Compressor Engine | Caterpillar Model 3508B Twin Turbo Compressor Engine, SN 6PN00401 | 2.69 MMBtu/hr | 1/24/98 |
| 27 | Freshwater Pump House Generator | Caterpillar Model D3512A, Diesel Electric Generator, SN 24Z01359 | 1,135 kW | 4/96 |
| 28[b] | Cod Generator #4 | Caterpillar Model D379, Diesel Electric Generator, SN 34Z00770 | 420 kW | 6/82 |
| 29[b] | Cod Generator #5 | Caterpillar Model D379, Diesel Electric Generator, SN 34Z00771 | 420 kW | 6/82 |
| 30 | Trash Incinerator | Therm Tec Model G-50, SN 7916 | 750 lb trash/hr | 2/02 |
| 31[a] | Portable Generator #2 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 32[a] | Portable Generator #3 | 'Portable' Diesel Electric Generator | 350 kW | TBD |

Table 2 Notes:
[a] The Permittee may substitute or increase the rating of Emission Units 25, 31 and/or 32 as described in Condition 20.
[b] The Permittee decommissioned Emission Units 28 and 29 on April 15, 2007 and removed them from Akutan on April 27, 2007.

## Phase 1 Conditions

5. **During Phase 1,** the Permittee is authorized to operate the emission units described in Table 2, in accordance with the terms and conditions of this permit.

**Table 2 – Phase 1 Emission Unit Inventory**

| Unit | Unit Name | Unit Description | Rating/size | Install Date |
|---|---|---|---|---|
| 1 | Pollock Generator #4 | Caterpillar Model D3516B Low $NO_X$ Diesel Electric Generator, Serial Number (SN) 7RN00229 | 1,655 kW | 5/1/94 |
| 2a | Cod Generator #1 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00273 | 1,360 kW | 1/24/98 Mod 11/04 |
| 3a | Cod Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00274 | 1,360 kW | 1/24/98 Mod 11/04 |
| 4c[a] | Pollock Generator #1 | Caterpillar Model C175-16 Diesel Electric Generator, SN WYB00111 | 2,250 kW | 6/4/07 |
| 5b[b] | Pollock Generator #2 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 7RN01420 | 1,655 kW | 12/03 |
| 6b | Pollock Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8EM00253 | 1,360 kW | 11/1/1999 Mod TBD |
| 7b | Cod Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 1GZ01229 | 1,360 kW | 11/03 Mod 6/3/05 |
| 8 | Pollock Boiler #1 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85166 | 16.74 MMBtu/hr | 1/15/90 |
| 9 | Pollock Boiler #2 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85165 | 16.74 MMBtu/hr | 1/15/90 |
| 10 | Cod Boiler #1 | Johnston 516 AC Steam Boiler, SN 4756 | 5.11 MMBtu/hr | 5/1/82 |
| 11 | Cod Boiler #2 | Johnston 516 AC Steam Boiler, SN 4757 | 5.11 MMBtu/hr | 5/1/82 |
| 12 | Fish Meal Drier | Pedar Halvorsen Furnace, SN#502511 | 34.6 MMBtu/hr | 7/96 |
| 23a | Boiler | Cleaver Brooks Model 200-500-150 Steam Boiler, SN L62902 | 21 MMBtu/hr | 2/22/05 |
| 24 | Boiler | Falcon Boiler, SN M8616 | 1.02 MMBtu/hr | 6/95 |
| 25[c] | Sealand Engine | Detroit Diesel Series 60 Diesel Electric Generator, SN 06R0096733 | 350 kW | 9/95 |
| 26 | Compressor Engine | Caterpillar Model 3508B Twin Turbo Compressor Engine, SN 6PN00401 | 2.69 MMBtu/hr | 1/24/98 |
| 27 | Freshwater Pump House Generator | Caterpillar Model D3512A, Diesel Electric Generator, SN 24Z01359 | 1,135 kW | 4/96 |
| 28a[d] | Cod Generator #4 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00514 | 1,360 kW | 6/15/00 Mod 11/04 |
| 29[e] | Cod Generator #5 | Caterpillar Model D379, Diesel Electric Generator, SN 34Z00771 | 420 kW | 6/82 |
| 30 | Trash Incinerator | Therm Tec Model G-50, SN 7916 | 750 lb trash/hr | 2/02 |
| 31[c] | Portable Generator #2 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 32[c] | Portable Generator #3 | 'Portable' Diesel Electric Generator | 350 kW | TBD |

Table 2 Notes:
[a] The Permittee installed Emission Unit 4c on June 4, 2007, as described in Condition 6.
[b] The Permittee relocated Emission Unit 4b (renamed Emission Unit 5b) in June 2007, as described in Condition 6.
[c] The Permittee may substitute or increase the rating of Emission Units 25, 31 and/or 32 as described in Condition 20.
[d] The Permittee relocated Emission Unit 5a (renamed Emission Unit 28a) in June 2007, as described in Condition 6.
[e] The Permittee decommissioned Emission Unit 29 on April 15, 2007 and removed it from Akutan on April 27, 2007.

6. **Authorization to Install Emission Units 4c, 5b and 28a**

6.1 The Permittee is authorized to install, but not operate, Emission Units 4c, 5b and 28a *prior to* Phase 1.

6.2 Prior to installing Emission Unit 4c, the Permittee shall:

a. relocate Emission Unit 5a to the former location of Emission Unit 28[2], and rename to Emission Unit 28a, and

b. relocate Emission Unit 4b to the former location of Emission Unit 5a and rename to Emission Unit 5b.

6.3 The Permittee shall notify the Department of the installation of Emission Unit 4c, Emission Unit 5b, and Emission Unit 28a, in accordance with Condition 19.1.

7. **Authorization to Upgrade Pollock Generator #3**

7.1 The Permittee is authorized to upgrade the Pollock Generator #3 (EU ID 6a) generator rating from 1,240 kW to 1,360 kW *prior to* Phase 1. However, the Permittee may *not* operate the upgraded emission unit *prior to* Phase 1.

7.2 Upon upgrading the generator rating, the Permittee shall:

a. relabel the Pollock Generator #3 diesel-generator set from Emission Unit 6a to Emission Unit 6b; and

b. notify the Department in accordance with Condition 19.1.

8. **Initial Startup Requirements**. The Permittee shall notify the Department in accordance with Condition 19.2 upon initial startup of each of the following Emission Units: 4c, 5b, 6b and 28a.

[2] The Permittte decommissioned Emission Units 28 and 29 on April 15, 2007 and removed them from Akutan on April 27, 2007 during Phase 0.

## Phase 2 Conditions

9. **During Phase 2,** the Permittee is authorized to operate the emission units described in Table 3, in accordance with the terms and conditions of this permit.

**Table 3 – Phase 2 Emission Unit Inventory**

| Unit | Unit Name | Unit Description | Rating/size | Install Date |
|---|---|---|---|---|
| 1 | Pollock Generator #4 | Caterpillar Model D3516B Low $NO_X$ Diesel Electric Generator, Serial Number (SN) 7RN00229 | 1,655 kW | 5/1/94 |
| 2a | Cod Generator #1 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00273 | 1,360 kW | 1/24/98 Mod 11/04 |
| 3a | Cod Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00274 | 1,360 kW | 1/24/98 Mod 11/04 |
| 4c[a] | Pollock Generator #1 | Caterpillar Model C175-16 Diesel Electric Generator, SN WYB00111 | 2,250 kW | 6/4/07 |
| 5b[b] | Pollock Generator #2 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 7RN01420 | 1,655 kW | 12/03 |
| 6c | Pollock Generator #3 | Caterpillar Model C175-16 Diesel Electric Generator, SN TBD | 2,250 kW | TBD |
| 7b | Cod Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 1GZ01229 | 1,360 kW | 11/03 Mod 6/3/05 |
| 8 | Pollock Boiler #1 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85166 | 16.74 MMBtu/hr | 1/15/90 |
| 9 | Pollock Boiler #2 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85165 | 16.74 MMBtu/hr | 1/15/90 |
| 10 | Cod Boiler #1 | Johnston 516 AC Steam Boiler, SN 4756 | 5.11 MMBtu/hr | 5/1/82 |
| 11 | Cod Boiler #2 | Johnston 516 AC Steam Boiler, SN 4757 | 5.11 MMBtu/hr | 5/1/82 |
| 12 | Fish Meal Drier | Pedar Halvorsen Furnace, SN#502511 | 34.6 MMBtu/hr | 7/96 |
| 23a | Boiler | Cleaver Brooks Model 200-500-150 Steam Boiler, SN L62902 | 21 MMBtu/hr | 2/22/05 |
| 24 | Boiler | Falcon Boiler, SN M8616 | 1.02 MMBtu/hr | 6/95 |
| 25[c] | Sealand Engine | Detroit Diesel Series 60 Diesel Electric Generator, SN 06R0096733 | 350 kW | 9/95 |
| 26 | Compressor Engine | Caterpillar Model 3508B Twin Turbo Compressor Engine, SN 6PN00401 | 2.69 MMBtu/hr | 1/24/98 |
| 27 | Freshwater Pump House Generator | Caterpillar Model D3512A, Diesel Electric Generator, SN 24Z01359 | 1,135 kW | 4/96 |
| 28a[d] | Cod Generator #4 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00514 | 1,360 kW | 6/15/00 Mod 11/04 |
| 29a[e] | Cod Generator #5 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8EM00253 | 1,360 kW | 11/1/99 Mod TBD |
| 30 | Trash Incinerator | Therm Tec Model G-50, SN 7916 | 750 lb trash/hr | 2/02 |
| 31[c] | Portable Generator #2 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 32[c] | Portable Generator #3 | 'Portable' Diesel Electric Generator | 350 kW | TBD |

Table 3 Notes:
[a] The Permittee installed Emission Unit 4c on June 4, 2007, as described in Condition 6.
[b] The Permittee relocated Emission Unit 4b (renamed Emission Unit 5b) in June 2007, as described in Condition 6.
[c] The Permittee may substitute or increase the rating of Emission Units 25, 31 and/or 32 as described in Condition 20.
[d] The Permittee relocated Emission Unit 5a (renamed Emission Unit 28a) in June 2007, as described in Condition 6.
[e] The Permittee shall relocate Emission Unit 6b and rename it as Emission Unit 29a as described in Condition 10.2a.

10. **Authorization to Install Emission Units 6c and 29a.**

10.1 The Permittee is authorized to install, but not operate, Emission Units 6c and 29a *prior to* Phase 2.

10.2 Before installing Emission Unit 6c, the Permittee shall:

a. relocate Emission Unit 6b to the former location of Emission Unit 29[3] and rename to Emission Unit 29a.

10.3 Upon installation of Emission Unit 29a, the Permittee shall modify its exhaust stack to comply with Condition 32.1.

10.4 The Permittee shall notify the Department of the installation of Emission Unit 6c and of Emission Unit 29a in accordance with Condition 19.1.

10.5 When submitting the notification required under Condition 10.4 for Emission Unit 29a, the Permittee shall also include as-built drawings and a photograph that demonstrates the exhaust stack for Emission Unit 29a complies with Condition 32.1.

10.6 The Permittee shall conduct new $NO_X$ emission source tests for the engine configuration setting(s) proposed by the Permittee to be used for Emission Unit 6c (i.e., low $NO_X$ mode or fuel efficiency mode setting) within 90 days of installing Emission Unit 6c in accordance with the requirement as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50. Test the emission unit at no less than three loads (high, mid and low) within the normal operating range of the emission unit. Alternately, if Emission Unit 4c has already undergone an ADEC-approved source testing, and Permittee certifies that Emission Units 4c and 6c are identical in all aspects that will have an effect on emissions, the Department will allow applicable Emission Unit 4c source tests to apply to Emission Unit 6c for the same engine configuration mode .

11. **Initial Startup of Emission Units 6c and 29a**. The Permittee shall notify the Department in accordance with Condition 19.2 upon initial startup of each of the following Emission Units: 6c and 29a.

[3] The Permittte decommissioned Emission Units 28 and 29 on April 15, 2007 and removed them from Akutan on April 27, 2007 during Phase 0.

## Phase 3 Conditions

12. **During Phase 3,** the Permittee is authorized to operate the emission units described in Table 4, in accordance with the terms and conditions of this permit.

**Table 4 – Phase 3 Emission Unit Inventory**

| Unit | Unit Name | Unit Description | Rating/size | Install Date |
|---|---|---|---|---|
| 1 | Pollock Generator #4 | Caterpillar Model D3516B Low $NO_X$ Diesel Electric Generator, Serial Number (SN) 7RN00229 | 1,655 kW | 5/1/94 |
| 2a | Cod Generator #1 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00273 | 1,360 kW | 1/24/98 Mod 11/04 |
| 3a | Cod Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00274 | 1,360 kW | 1/24/98 Mod 11/04 |
| 4c[a] | Pollock Generator #1 | Caterpillar Model C175-16 Diesel Electric Generator, SN WYB00111 | 2,250 kW | 6/4/07 |
| 5b[b] | Pollock Generator #2 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 7RN01420 | 1,655 kW | 12/03 |
| 6c | Pollock Generator #3 | Caterpillar Model C175-16 Diesel Electric Generator, SN TBD | 2,250 kW | TBD |
| 7b | Cod Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 1GZ01229 | 1,360 kW | 11/03 Mod 6/3/05 |
| 8 | Pollock Boiler #1 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85166 | 16.74 MMBtu/hr | 1/15/90 |
| 9 | Pollock Boiler #2 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85165 | 16.74 MMBtu/hr | 1/15/90 |
| 10 | Cod Boiler #1 | Johnston 516 AC Steam Boiler, SN 4756 | 5.11 MMBtu/hr | 5/1/82 |
| 11 | Cod Boiler #2 | Johnston 516 AC Steam Boiler, SN 4757 | 5.11 MMBtu/hr | 5/1/82 |
| 12 | Fish Meal Drier | Pedar Halvorsen Furnace, SN#502511 | 34.6 MMBtu/hr | 7/96 |
| 23a | Boiler | Cleaver Brooks Model 200-500-150 Steam Boiler, SN L62902 | 21 MMBtu/hr | 2/22/05 |
| 24 | Boiler | Falcon Boiler, SN M8616 | 1.02 MMBtu/hr | 6/95 |
| 25[c] | Sealand Engine | Detroit Diesel Series 60 Diesel Electric Generator, SN 06R0096733 | 350 kW | 9/95 |
| 26 | Compressor Engine | Caterpillar Model 3508B Twin Turbo Compressor Engine, SN 6PN00401 | 2.69 MMBtu/hr | 1/24/98 |
| 27 | Freshwater Pump House Generator | Caterpillar Model D3512A, Diesel Electric Generator, SN 24Z01359 | 1,135 kW | 4/96 |
| 28a[d] | Cod Generator #4 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00514 | 1,360 kW | 6/15/00 Mod 11/04 |
| 29a[e] | Cod Generator #5 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8EM00253 | 1,360 kW | 11/1/99 Mod TBD |
| 30 | Trash Incinerator | Therm Tec Model G-50, SN 7916 | 750 lb trash/hr | 2/02 |
| 31[c] | Portable Generator #2 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 32[c] | Portable Generator #3 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 33 | Cod Generator #6 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN n/a | 1,655 kW | TBD |

Table 4 Notes:
[a] The Permittee installed Emission Unit 4c on June 4, 2007, as described in Condition 6.
[b] The Permittee relocated Emission Unit 4b (renamed Emission Unit 5b) in June 2007, as described in Condition 6.
[c] The Permittee may substitute or increase the rating of Emission Units 25, 31 and/or 32 as described in Condition 20.
[d] The Permittee relocated Emission Unit 5a (renamed Emission Unit 28a) in June 2007, as described in Condition 6.
[e] The Permittee *should have relocated* Emission Unit 6b and renamed it as Emission Unit 29a as described in Condition 10.2a during Phase 2.

13. **Authorization to Install Emission Unit 33.**

13.1 The Permittee is authorized to install, but not operate, Emission Unit 33 *prior to* Phase 3.

13.2 The Permittee shall notify the Department of the installation of Emission Unit 33 in accordance with Condition 19.1.

13.3 When submitting the notification required under Condition 13.2, the Permittee shall also include as-built drawings and a photograph that demonstrates the exhaust stack for Emission Unit 33 complies with Condition 32.1.

14. **Initial Startup of Emission Unit 33**. The Permittee shall notify the Department in accordance with Condition 19.2 upon initial startup of Emission Unit 33.

## Phase 4 Conditions

15. **During Phase 4,** the Permittee is authorized to operate the emission units described in Table 5, in accordance with the terms and conditions of this permit.

**Table 5 – Phase 4 Emission Unit Inventory**

| Unit | Unit Name | Unit Description | Rating/size | Install Date |
|---|---|---|---|---|
| 1 | Pollock Generator #4 | Caterpillar Model D3516B Low $NO_X$ Diesel Electric Generator, Serial Number (SN) 7RN00229 | 1,655 kW | 5/1/94 |
| 2a | Cod Generator #1 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00273 | 1,360 kW | 1/24/98 Mod 11/04 |
| 3a | Cod Generator #2 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00274 | 1,360 kW | 1/24/98 Mod 11/04 |
| 4c[a] | Pollock Generator #1 | Caterpillar Model C175-16 Diesel Electric Generator, SN WYB00111 | 2,250 kW | 6/4/07 |
| 5b[b] | Pollock Generator #2 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 7RN01420 | 1,655 kW | 12/03 |
| 6c | Pollock Generator #3 | Caterpillar Model C175-16 Diesel Electric Generator, SN TBD | 2,250 kW | TBD |
| 7b | Cod Generator #3 | Caterpillar Model D3512B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 1GZ01229 | 1,360 kW | 11/03 Mod 6/3/05 |
| 8 | Pollock Boiler #1 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85166 | 16.74 MMBtu/hr | 1/15/90 |
| 9 | Pollock Boiler #2 | Cleaver Brooks Model NCB 100-400 Steam Boiler, SN 85165 | 16.74 MMBtu/hr | 1/15/90 |
| 10 | Cod Boiler #1 | Johnston 516 AC Steam Boiler, SN 4756 | 5.11 MMBtu/hr | 5/1/82 |
| 11 | Cod Boiler #2 | Johnston 516 AC Steam Boiler, SN 4757 | 5.11 MMBtu/hr | 5/1/82 |
| 12 | Fish Meal Drier | Pedar Halvorsen Furnace, SN#502511 | 34.6 MMBtu/hr | 7/96 |
| 23a | Boiler | Cleaver Brooks Model 200-500-150 Steam Boiler, SN L62902 | 21 MMBtu/hr | 2/22/05 |
| 24 | Boiler | Falcon Boiler, SN M8616 | 1.02 MMBtu/hr | 6/95 |
| 25[c] | Sealand Engine | Detroit Diesel Series 60 Diesel Electric Generator, SN 06R0096733 | 350 kW | 9/95 |
| 26 | Compressor Engine | Caterpillar Model 3508B Twin Turbo Compressor Engine, SN 6PN00401 | 2.69 MMBtu/hr | 1/24/98 |
| 27 | Freshwater Pump House Generator | Caterpillar Model D3512A, Diesel Electric Generator, SN 24Z01359 | 1,135 kW | 4/96 |
| 28a[d] | Cod Generator #4 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8RM00514 | 1,360 kW | 6/15/00 Mod 11/04 |
| 29a[e] | Cod Generator #5 | Caterpillar Model D3512B, Quad Turbo Low $NO_X$ Diesel Electric Generator, SN 8EM00253 | 1,360 kW | 11/1/99 Mod TBD |
| 30 | Trash Incinerator | Therm Tec Model G-50, SN 7916 | 750 lb trash/hr | 2/02 |
| 31[c] | Portable Generator #2 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 32[c] | Portable Generator #3 | 'Portable' Diesel Electric Generator | 350 kW | TBD |
| 33 | Cod Generator #6 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN n/a | 1,655 kW | TBD |
| 34 | Cod Generator #7 | Caterpillar Model D3516B Quad Turbo Low $NO_X$ Diesel Electric Generator, SN n/a | 1,655 kW | TBD |

Table 5 Notes:
[a] The Permittee installed Emission Unit 4c on June 4, 2007, as described in Condition 6.
[b] The Permittee relocated Emission Unit 4b (renamed Emission Unit 5b) in June 2007, as described in Condition 6.
[c] The Permittee may substitute or increase the rating of Emission Units 25, 31 and/or 32 as described in Condition 20.
[d] The Permittee relocated Emission Unit 5a (renamed Emission Unit 28a) in June 2007, as described in Condition 6.
[e] The Permittee *should have relocated* Emission Unit 6b and renamed it as Emission Unit 29a as described in Condition 10.2a during Phase 2.

16. **Authorization to Install Emission Unit 34.**

16.1 The Permittee is authorized to install, but not operate, Emission Unit 34 *prior to* Phase 4.

16.2 The Permittee shall notify the Department of the installation of Emission Unit 34 in accordance with Condition 19.1.

16.3 When submitting the notification required under Condition 16.2, the Permittee shall also include as-built drawings and a photograph that demonstrates the exhaust stack for Emission Unit 34 complies with Condition 32.1.

17. **Initial Startup of Emission Unit 34**. The Permittee shall notify the Department in accordance with Condition 19.2 upon initial startup of Emission Unit 34.

## General Conditions – All Phases

18. The Permittee is authorized to operate the storage tanks described in Table 6, in accordance with the terms and conditions of this permit.

**Table 6 – Storage Tank Inventory**

| ID | Unit Name | Unit Description | Size | Install Date |
|---|---|---|---|---|
| T1 | Tank #1 | Fish Oil | 49,750 gallons | 1991 |
| T2 | Tank #2 | Diesel | 372,320 gallons | 1988 |
| T3 | Tank #3 | Diesel | 372,320 gallons | 1988 |
| T4 | Tank #4 | Diesel | 372,320 gallons | 1988 |
| T5 | Tank #5 | Diesel | 372,320 gallons | 1988 |
| T6 | Tank #6 | Diesel | 216,000 gallons | 1982 |

19. Emission Unit notification requirements:

19.1 The Permittee shall notify the Department within seven days of installing a new fuel-burning emission unit or modifying an existing fuel-burning emission unit. The notification shall identify the:

a. ID of the new or modified emission unit;

b. ID of the pre-modified or removed emission unit (if applicable);

c. make, model and rating of the new/modified emission unit;

d. make, model and rating of pre-modified/removed emission unit (if applicable)

e. serial number of all applicable emission units;

f. installation/modification date;

g. anticipated initial start-up date of new/modified emission unit; and

h. removal date of a replaced emission unit, if applicable.

19.2 The Permittee shall notify the Department within seven days after initial startup of a new or modified fuel-burning emission unit. The notification shall identify the:

a. ID

b. make, model and rating;

c. serial number; and

d. initial start-up date.

20. **Portable Generator Allowances.** The Permittee may replace the portable generators (Emission Units 25, 31, and 32) with substitute emission units. The Permittee may also increase the rating of a portable generator listed in Table 2, Table 3, Table 4, or Table 5 by limiting the total number of portable generators used during the selected phase. In all cases, the combined capacity of all portable generators used during the selected phase shall not exceed 1,050 kW.

20.1 If the Permittee replaces any of the portable generators (Emission Units 25, 31 or 32) with substitute units, the Permittee shall, within seven days of installation:

a. assign each substitute an ID using the existing ID and adding a letter starting with "a" (i.e. 31 replaced by 31a, replaced by 31b, etc.);

b. notify the Department in accordance with Condition 19 of the substitute emission unit make and model, unit ID, serial number, anticipated initial start-up date, installation date, and removal date of the replaced emission unit;

c. include with the notification provided in Condition 20.1b which portable generators will not be operated during the selected phase (if applicable), along with the total capacity of the portable generators that will be operated during the selected phase; *and*

d. provide emission rate information showing that the substitute emission units' emission rates in pounds per gallon at 100 percent load are equal to or less than the emission rates listed in Table 7 for CO, $NO_X$, and PM-10.

**Table 7 – Portable Generator Emission Rates**

| Pollutant | Emission Factor (lb/gal) |
|---|---|
| $NO_X$ | 0.4 |
| PM | 0.0095 |
| CO | 0.115 |

20.2 Subsequent to installation of the substitute emission unit, track operating hours and fuel use separately from the replaced emission units.[4]

20.3 Report as an excess emission, as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, any time that the total capacity of the portable generators (subtitutes for Emission Units 25, 31 and/or 32, or the letter-designation variants thereof, as applicable) exceeds the 1,050 kW limit in Condition 20.

[4] The substitute emission units are subject to any applicable group limits for the existing emission units.

21. **Clarification Regarding Emission Unit Descriptions**. Except as noted elsewhere in this permit, the information in Table 1, Table 2, Table 3, Table 4, and Table 5 is for information purposes only. The specific emission unit descriptions do not restrict the Permittee from replacing an emission unit identified in the tables. The Permittee shall comply with all applicable provisions of AS 46.14 and 18 AAC 50 when installing a replacement emission unit, including any applicable minor or construction permit requirements.

22. **Maintenance Requirements.** The Permittee shall maintain the fuel-burning emission units authorized by this permit in accordance with manufacturer's or operator's maintenance procedures.

23. **Selective Catalytic Reduction (SCR) Installation Authorization.** The Permittee is authorized to install and operate SCR units listed in Table 8 as needed. The Permittee is authorized to install additional SCR units at their discretion.

**Table 8 – SCR Installation Authorizations[a]**

| Unit[b] | SCR ID | SCR Name | SCR Description | Install Date |
|---|---|---|---|---|
| 1 | A | 167249/32 | SINOX System 2000 | 12/02 |
| 4b, 4c | B | 167580/105 | SINOX System 2000 | 6/03 |
| 2, 2a | C | 167580/106 | SINOX System 2000 | 6/03 |
| 5, 5a | D | 167370/17 | SINOX System 2000 | 9/04 |
| 3a | E | 167370/15 | SINOX System 2000 | 9/04 |
| 6a, 6b,6c | F | 167370/12 | SINOX System 2000 | 10/04 |

Table 8 Notes:

[a] Except as noted elsewhere in this permit, the information in this table is for identification purposes only.

[b] The emission unit in this column reflects the Emissions Unit/SCR ID configuration as of permit issuance. The Permittee is not restricted to the Emission Unit/SCR ID configurations shown in this table.

24. **Used Oil Authorization.**[5] The Permittee may burn used oil blended with one of the following: 1) fuel oil, 2) fish oil, or 3) a fuel oil and fish oil blend, in heaters and boilers as follows:

    24.1 Comply with the fuel sulfur requirement for the applicable phase, as described in Condition 35.

    24.2 Comply with the state PM standard listed in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 by blending the used oil with one of the fuel options specified in Condition 24using a metering system or other reproducible method accurate to plus or minus five percent at a ratio of one gallon of used oil to at least seven gallons ofone of the fuel options specified in Condition 24. Record the date, the quantity of used oil blended (gallons), and the quantity of non used oil blended (gallons).

    24.3 Submit the information required under Condition 24.2 for the reporting period, with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

[5] CAUTION! Although this condition should ensure compliance with the applicable emission standards of 18 AAC 50, this permit does NOT ensure compliance with other applicable state or federal laws concerning management, use, or disposal of used oil.

25. **Fish Oil Engine Authorization.** The Permittee may burn fish oil or a fuel oil and fish oil blend in an engine, only upon written Department approval. Monitor, record, and report as follows:

25.1 Comply with the fuel sulfur requirement for the applicable phase, as described in Condition 34.

25.2 Comply with $NO_X$ PSD avoidance limits in Condition 27 as follows:

a. Conduct $NO_X$ emission source testing using procedures set out in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 within ten operating days after initial conversion to fish oil or a fuel oil and fish oil blend, and as follows to obtain Department approval, except as set out in Condition 25.3.

(i) Test each emission unit at no less than three loads (high, mid, and low) within the normal operating range of the emission unit. If the Permittee certifies that emission units have identical configuration, the Department will allow one emission unit to be tested within that group.

(ii) During each performance test run, monitor and record opacity in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

(iii) At each performance test load, perform the test at the desired fish oil/fuel oil blend(s) and at 100 percent diesel fuel.

(iv) During each performance test, monitor and record the emission unit's average load, electric generation rate, and blended fuel consumption rate.

(v) Determine the fuel-specific higher heating value (gross heat value) for each fuel or fuel blend used during performance testing, by obtaining a vendor certification or by analyzing a representative sample of the fuel or blend in accordance with ASTM D 240, 4809 or 2382.

(vi) Determine load-specific $NO_X$ emission factors (pounds per gallon and pound per hour) expressed as $NO_2$, based on EPA Reference Method 19.

(vii) Include the information obtained in Conditions 25.2a(ii) through 25.2a(vi) in the source test report in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

b. After Department approval of the source test, if results show different engine-specific and fuel-specific $NO_X$ emission factors for fish oil or blended fuels than that demonstrated for fuel oil, use the fish oil or fuel oil and fish oil blend emission factors to calculate the emission unit's 12 consecutive month total emissions in Condition 27 during any period during which the emission unit combusts fish oil or a fuel oil and fish oil blend retroactive to date of test.

25.3 Obtain Department approval in writing before using fish oil or a fuel oil and fish oil blend in any emission unit equipped with SCR.

a. Obtain from the vendor a demonstration that fish oil or fuel oil and fish oil blends will not cause or contribute to an accelerated decrease of SCR performance.

b. Submit to the Department:

(i) the SCR vendor demonstration that include compatibility of SCR reagent and fish oil;

(ii) the estimated emission reduction compared to diesel fuel;

(iii) the recommended changes of dosing and concentration of reagent in SCR (remapped to engine if needed); and

(iv) the recommended increase in SCR maintenance and inspection intervals.

c. If the Department approves the use of fish oil blend, comply with the requirements of Conditions 25.1 and 25.2.

25.4 Blend the fish oil with fuel oil using a metering system accurate to plus or minus five percent. Blend at a ratio not to exceed that for which the Permittee has conducted emission source tests under Condition 25.2a to verify site-specific $NO_X$ emission factors.

a. Record the date, volume of fish oil (gallons), volume of fuel oil (gallons) in the blend, and the blend ratio.

b. Report as excess emissions in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, if the blend ratio exceeds the ratio for which Trident has conducted emission source tests under Condition 25.2a.

c. Include in the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, the information required under Condition 25.4a for the reporting period.

26. **Fish Oil Boiler Authorization.** The Permittee may burn fish oil or a fish oil and fuel oil blend in EU IDs 8, 9, 12 and 23a.

26.1 Comply with the fuel sulfur requirement for the applicable phase, as described in Condition 34.

26.2 Comply with $NO_X$ PSD avoidance limits in Condition 27 as follows:

a. Conduct $NO_X$ emission source testing using procedures set out in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 within ten operating days after initial conversion to fish oil or a fish oil and fuel oil blend, and as follows to obtain Department approval, except as set out in Condition 25.3.

(i) Test each emission unit within the normal operating range of the emission unit. If the Permittee certifies that emission units have identical configuration, the Department will allow one emission unit to be tested within that group.

(ii) During each performance test run, monitor and record opacity in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

(iii) Perform the test at the desired fish oil or fish oil and fuel oil blend and at 100 percent diesel fuel.

(iv) During each performance test, monitor and record the emission unit's blended fuel consumption rate.

(v) Determine the fuel-specific higher heating value (gross heat value) for each fuel or fuel blend used during performance testing, by obtaining a vendor certification or by analyzing a representative sample of the fuel or blend in accordance with ASTM D 240, 4809 or 2382.

(vi) Determine $NO_X$ emission factors (pounds per gallon and pound per hour) expressed as $NO_2$, based on EPA Reference Method 19.

(vii) Include the information obtained in Conditions 25.2a(ii) through 25.2a(vi) in the source test report in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

b. After Department approval of the source test, if results show different boiler-specific and fuel-specific $NO_X$ emission factors for fish oil or a fish oil and fuel oil blend than that demonstrated for fuel oil, use the fish oil or fish oil and fuel oil blend emission factors to calculate the emission unit's 12 consecutive month total emissions in Condition 27 during any period during which the emission unit combusts fish oil or a fish oil and fuel oil blend retroactive to date of test.

26.3 Blend the fish oil with fuel oil using a metering system accurate to plus or minus five percent. Blend at a ratio not to exceed that for which the Permittee has conducted emission source tests under Condition 25.2a to verify site-specific $NO_X$ emission factors.

a. Record the date, volume of fish oil (gallons), volume of fuel oil (gallons) in the blend, and the blend ratio.

b. Report as excess emissions in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, if the blend ratio exceeds the ratio for which Trident has conducted emission source tests under Condition 25.2a.

c. Include in the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, the information required under Condition 25.4a for the reporting period.

## *Section 3 Owner Requested Limits to Avoid PSD-Major Classification*

27. **Limit to Avoid Classification as PSD-Major for $NO_X$.** The Permittee shall limit Akutan's $NO_X$ emissions to no more than 240 tons in any twelve consecutive months. Trident may use aqeous urea-based Selective Catalytic Reduction (SCR) as described in Condition 28 to actively reduce $NO_X$ emissions in addition to operational restrictions. Monitor, record, and report as follows:

27.1 **Fuel Consumption (Fuel Oil, Fish Oil, and Used Oil) and Operating Hour Monitoring.** Install and operate a dedicated continuous monitoring system for recording fuel consumption that is accurate to within five percent on each engine authorized to operate for the selected phase.

a. Monitor and record monthly and SCR interval fuel consumption *(TC* and *CC)* in gallons for each unit (SCR interval as defined in Condition 28.3).

b. Monitor and record monthly and SCR interval operating hours for each unit (SCR interval as defined in Condition 28.3).

c. For any period during which the fuel consumption monitoring system is out-of-bounds or not operational, then for purposes of calculating $NO_X$ emission in Condition 27.3, determine the monthly or SCR interval fuel consumption based on the hours recorded in Condition 27.1b, and the design fuel consumption rate in Exhibit A.

27.2 **Engine Load Requirements.**

a. Limit Emission Unit 26 to loads no greater than 79 percent by limiting the monthly fuel consumption rate to 62.6 gallons per hour. Calculate and record monthly fuel consumption rate by dividing the total fuel consumed in the month by the total hours of operation for the month.

b. For all engines not equipped with SCR, calculate and record monthly percent load by dividing the monthly fuel consumption (gallons) by the hours operated in the month, then dividing that number by the design fuel consumption rate in gallons per hour from Exhibit A, and multiplying by 100.

c. For engines equipped with SCR

(i) Calculate and record the SCR interval percent load by dividing the SCR interval fuel consumption (gallons) by the hours operated during the interval, then dividing that number by the design fuel consumption rate in gallons per hour from Exhibit A, and multiplying by 100 (SCR interval as defined in Condition 28.3).

(ii) Calculate and record percent load for the remainder of the month by dividing the monthly uncontrolled fuel consumption (gallons) by the hours operated in the month without SCR, then dividing that number by the design fuel consumption rate in gallons per hour from Exhibit A, and multiplying by 100.

27.3 By the 15th of each month, calculate the previous month's total $NO_X$ emissions as follows:

a. **Engines**.

(i) For each engine that **did not** use SCR for any part of the month, calculate and record the monthly $NO_X$ emissions using Equation 1; as an alternative, for any specific engine, use the PTE for the engine listed in Exhibit A as monthly $NO_X$ emissions.

**Equation 1** $$NO_X = TC \times EF \times \frac{1\,ton}{2000\,lb}$$

Where:
- $NO_X$ = $NO_X$ emissions in tons per month;
- $TC$ = Fuel consumption in gallons per month for each emission unit that **did not** use SCR during the month (measured or calculated in accordance with Condition 27.1a); and
- $EF$ = $NO_X$ uncontrolled emission factor in lb per gallon from Exhibit A, based on the monthly average load recorded under Condition 27.2b for each emission unit, except as indicated in Condition 25.2b for fish oil combustion.

(ii) For each engine that **did** use SCR for any part of the month, calculate and record emissions using Conditions 27.3a(ii)(A) and 27.3a(ii)(B); as an alternative, for any specific engine, use the PTE for the engine listed in Exhibit A as monthly $NO_X$ emissions.

(A) Calculate the monthly $NO_X$ emissions **while using SCR**, for each interval using Equation 2.

**Equation 2** $$NO_X = \left[\sum_{i=1}^{n} (ineff_i \times CC_i) \times EF_i\right] \times \frac{1\,ton}{2000\,lb}$$

Where:
- $NO_X$ = $NO_X$ emissions in tons per month;
- $n$ = Number of intervals during the month for which a given engine used SCR
- $CC$ = Controlled fuel consumption in gallons for each interval $i$ (measured or calculated in accordance with Condition 27.1a);
- $ineff$ = The SCR ineffectiveness for interval $i$ (measured or calculated in accordance with Condition 28.3)
- $EF$ = $NO_X$ uncontrolled emission factor in lb per gallon from Exhibit A based on the load recorded under Condition 27.2c(i) for interval $i$, except as indicated in Condition 25.2b for fish oil combustion.

(B) Calculate the monthly $NO_X$ emissions **while not using SCR** using Equation 3.

**Equation 3** $$NO_X = UC \times EF \times \frac{1\,ton}{2000\,lb}$$

Where: $NO_X$ = $NO_X$ emissions in tons per month;
$UC$ = Uncontrolled fuel consumption in gallons for each engine ($UC = TC - (CC1 + CC2, etc)$, $TC$ and $CC$ (measured or calculated in accordance with Condition 27.1a);
$EF$ = $NO_X$ uncontrolled emission factor in lb per gallon from Exhibit A based on the load recorded under Condition 27.2c(ii) for each unit, except as indicated in Condition 25.2b for fish oil combustion.

b. **Non-Engines (except incinerator).** For each non-engine (except incinerator) calculate and record the $NO_X$ emissions using Equation 4; as an alternative, for any specific emission unit, use the PTE for the emission unit listed in Exhibit A as monthly $NO_X$ emissions.

**Equation 4** $$NO_X = TC \times EF \times \frac{1\,ton}{2000\,lb}$$

Where: $NO_X$ = $NO_X$ emissions in tons per month;
$TC$ = Fuel consumption in gallons per month (measured or calculated in accordance with Condition 27.1a); and
$EF$ = $NO_X$ uncontrolled emission factor in lb per gallon from Exhibit A, except as indicated in Condition 26 for fish oil combustion

c. **Incinerator.** Charge no greater than 146 tons of refuse each month (equivalent to 400 lb/hour continuous capacity). Monitor, record, and report as follows:

(i) Weigh and record weight of each batch of waste charged in the incinerator. Calculate and record the total quantity of waste burned each month in tons.

(ii) Calculate and record actual $NO_X$ emissions from the incinerator using Equation 5; as an alternative, use a PTE of 1.4 tpm for the incinerator.

**Equation 5** $$NO_X = \left[(TC \times 0.2) + (TW \times 2.6)\right] \times \frac{1\,ton}{2000\,lb}$$

Where: $NO_X$ = $NO_X$ emissions in tons per month for Emission Unit 30;
$TC$ = Fuel consumption in gallons per month (measured or calculated in accordance with Condition 27.1a);
0.2 = diesel fuel combustion emission factor (lb/gallon);
$TW$ = monthly waste incinerated (tons); and
2.6 = waste combustion emission factor (lb/ton)

27.4 By the 15th of each month, add the monthly $NO_X$ emission for all emission units calculated under Condition 27.3 to obtain the stationary source monthly total. Add the monthly stationary source total to the stationary source total for the previous 11 months to determine the 12 consecutive month total for the stationary source.

27.5 If the $NO_X$ emissions calculated under Condition 27.4 exceed 235 tons per 12 consecutive months, conduct a $NO_X$ emission source test on each engine authorized to operate under the selected phase, except for Emission Units 25, 27 through 29, 31, and 32 (or the letter-designated variants thereof, as applicable), within 90 days, unless a source test has been conducted within the previous 12 months. Conduct the source tests at no less than three loads within the normal operating range of the emission unit using procedures set out in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, and as follows.

a. For emission units equipped with SCR, simultaneously conduct a test upstream and downstream of the SCR unit.

(i) For each run, conduct a simultaneous instrument accuracy verification test using the Engine Exhaust $NO_X$ Analyzer described in Condition 30 to collect one representative sample. Obtain readings from directly upstream and directly downstream of the SCR according to regular operational procedures in Conditions 30.2, 30.3b, and the Department-approved Quality Assurance/Quality Control (QA/QC) Plan as follows

(ii) For each test, determine the load curve, the urea reagent concentration, the urea flow rate, and the ammonia slip.

b. During each test, monitor and record the unit's average load, electric generation rate, and fuel consumption rate.

c. For each test, analyze a representative fuel sample to determine its higher heating value and specific gravity using ASTM methods incorporated by reference in ASTM 396-62, Specifications for Fuel Oil.

d. Determine the load-specific $NO_X$ emission rate (pounds per gallon and pounds per hour), based on EPA Method 19.

e. Include the information obtained in Conditions 27.5a through 27.5d in the source test report required in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

27.6 After Department approval of the source tests conducted under Condition 27.5, use the source test emission factors to calculate the emission unit's emissions in Condition 27.3. If the emission factor in pounds per gallon for any given load differs from the values listed in Exhibit A, recalculate12 consecutive month total emission, starting six months prior to the source test, and submit an updated operating report for those periods as needed.

27.7 Report as excess emissions in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 any time the $NO_X$ emissions calculated under Condition 27.4 or 27.6 exceeds 240 tons per 12 consecutive months.

27.8 Include in the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50:

a. the monthly total fuel use and operating hours for each emission unit, under Condition 27.1a or 27.1c;

b. the engine loads (monthly average, SCR interval) recorded Conditions 27.2;

c. the monthly total waste incinerated recorded under Condition 27.3c(ii); and

d. the monthly and 12 consecutive month total $NO_X$ emissions for the stationary source under Condition 27.4 or 27.6.

28. **Selective Catalytic Reduction (SCR) Requirements**. For each SCR system, install and operate SCR units in accordance with the Department-approved Quality Assurance/Quality Control Plan (QA/QC) Plan as follows.

28.1 Maintain on-site a spare catalyst bed in new condition for each group of compatible SCR units, except if the spare catalyst bed is compatible with all SCR units, the Permittee may maintain on-site only one catalyst bed in new condition for all SCR units.

28.2 Maintain on-site necessary vendor-recommended spare parts (spray nozzles, lance, pumps, seals, and solenoids).

28.3 **SCR $NO_X$ Removal Effectiveness.** Determine SCR effectiveness for each interval[6] of SCR use as follows.

a. Measure total parts per million (ppm) nitric oxide (NO) concentration of exhaust stream before and after SCR treatment using a gas analyzer that meets the performance specifications set out in Condition 30.

b. Calculate nitrogen dioxide ($NO_2$) concentration of exhaust stream both before and after the SCR unit as five percent of the total $NO_X$ in the exhaust stream as shown in Equation 6.

c. Calculate the total $NO_X$ of exhaust stream both before and after the SCR unit by summing the measured NO concentration and the calculated $NO_2$ concentration as shown in Equation 7.

[6] An SCR interval is any period between SCR Effectiveness tests, while the emission unit is using SCR.

d. Calculate the effectiveness using Equation 8, upon initiating a period of SCR controlled operations for a specific engine; and, except as indicated in Condition 28.3e, at least every seven operating days for the duration of continuous SCR emission controls of that engine.

**Equation 6** $$NO_2 = NO * \frac{0.05}{0.95}$$

**Equation 7** $$NO_X = NO + NO_2$$

**Equation 8** $$eff = \frac{NO_X(in) - NO_X(out)}{NO_X(in)} \times 100$$

Where:

| | | |
|---|---|---|
| $eff$ | = | SCR effectiveness in percent |
| $NO_{X\,in}$ | = | $NO_X$ concentration in ppm before SCR |
| $NO_{X\,out}$ | = | $NO_X$ concentration in ppm after SCR |

e. If the $NO_X$ emissions calculated under Condition 27.4 exceed 230 tons per 12 consecutive months, measure SCR effectiveness daily starting on the 15th of the month following the month that resulted in greater than 230 tpy $NO_X$ emissions, and continuing until the 12 consecutive month $NO_X$ emissions are shown to be below 230 tons per 12 consecutive months.

f. Record the effectiveness for each SCR interval. (The effectiveness for each interval is the **lowest** effectiveness measured for the tests that bound that interval. (For instance, interval 1 is bounded by 80 percent and 85 percent. The effectiveness for interval 1, *eff1*, is 80 percent.)

28.4 In case of SCR malfunction, contact the SCR vendor or certified technician and implement their prescribed corrective actions, and record:

a. a complete description of the corrective action;

b. the date the corrective action was completed;

c. the technician's contact information (if the corrective action was prescribed by an SCR manufacturer or certified technician); and

d. if applicable, a description of how any corrective actions completed differed from what was prescribed by the SCR manufacturer or certified technician, and the basis for the difference.

28.5 Keep records of

a. all SCR system repairs, maintenance, and SCR control system adjustments, including time and date;

b. the dates and times each time that SCR controls are started up and shut down. Start-up means that the catalyst bed temperature is within the manufacturer's recommended temperature set points for optimal $NO_X$ removal and reagent injection is at a rate consistent with the programable logic controller setting for the operating engine's load setting. Shut down means that the engine is no longer running or one of the above parameters is out of bounds;

c. hourly records of injection rate of SCR reagent in gal/hr and records of the concentration of SCR reagent in lb/gal for each batch prepared;

d. receipts for all urea purchases (with dates and quantities);

e. system alarm logs including time, date of occurrence; and

f. date and time of every effectiveness test conducted under Condition 28.3, and results.

28.6 Include in the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50, all records required under Condition 28, except for the records required under Condition 28.5c. Maintain the records required under Condition 28.5c on-site for five years from the date of the record.

29. The Permittee is authorized to develop and maintain two uncontrolled $NO_X$ emission factors for each engine: one for an engine configuration setting of low- $NO_X$ mode, and one for an engine configuration setting of fuel economy (low brake specific fuel consumption) mode. These emission factors are tabulated in Exhibit A, in Table A 1 and Table A 2, respectively.

29.1 Upon its own initiative, Permittee may conduct new source tests for the purpose of developing uncontrolled emissions $NO_X$ emission factors for low-$NO_X$ mode and fuel economy mode engine configuration settings according to a Department approved test plan as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

29.2 Upon Department approval of the source test, the uncontrolled $NO_X$ emission factors and design fuel consumption values determined during the source test(s) will supersede the values shown in Exhibit A and the new $NO_X$ emission factors and design fuel consumption rates shall be used by the Permittee in the calculations in Condition 27.3 for the full calendar month in which Department approval occurs.

29.3 Within 30 days after receiving Department approval of a source test, the Permittee shall submit to the Department a revised Table A 1 and/or Table A 2 reflecting the updated $NO_X$ emission factors and design fuel consumption rates for each engine and load combination that was tested.

29.4 Upon Permittee's own initiative, Permittee may change configuration modes and operate the engines utilizing the uncontrolled $NO_X$ emission factors taken from source test results, as shown in Exhibit A. Within 7 days after changing an engine configuration mode and adopting alternate uncontrolled $NO_X$ emission factors to replace values in Table A 1 or Table A 2, the Permittee shall provide written notification to the Department certifying the date that the change was made and provide copies of engine configuration files.

30. **Engine Exhaust $NO_X$ Analyzer.** The Permittee shall maintain two (primary and secondary) exhaust gas $NO_X$ analyzers on-site that are capable of measuring NO concentrations of one to 1,000 ppmv and that is accurate to five percent in accordance with the QA/QC Plan. Comply with the following for analyzers required under this condition.

30.1 Install on the stacks of units capable of operating with SCR:

a. sampling ports that comport with 40 C.F.R. 60, Appendix B, Performance Specification 2, and a stack or duct free of cyclonic flow at the port location during the applicable test methods and procedures;

b. safe sampling platforms;

c. safe access to sampling platforms; and

d. utilities for emission sampling and testing equipment.

30.2 Develop an analyzer exhaust traverse for each sampling port of no less than three points to ensure representative sampling.

30.3 Relative Accuracy Requirements.

a. Keep calibration gas available on-site at all times.

b. Before each SCR effectiveness test required by Condition 28.3, test the analyzer's relative accuracy using $NO_X$ calibration gas as follows:

(i) Measure and record the:

(A) date;

(B) certified NO concentration of the calibration gas ($NO_{certified}$); and

(C) measured NO concentration of the calibration gas ($NO_{measured}$).

(ii) Calculate and record the relative accuracy using Equation 9.

**Equation 9** $$RA = \left| \frac{NO_{certified} - NO_{measured}}{NO_{certified}} \right| \text{ x } 100$$

Where: $RA$ = Relative Accuracy

c. Recalibrate or repair the primary analyzer if relative accuracy exceeds five percent, and no less than once each year. The recalibration must be performed by the manufacturer or a trained technician.

d. Keep records of each relative accuracy test. Notify the Department within seven days of the audit date if any analyzer's relative accuracy calculation conducted under Condition 30.3b results in a relative accuracy greater than five percent.

e. Include with the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.:

(i) a copy of the receipt for any recalibration following return of the recalibrated analyzer required under Condition 30.3c; and

(ii) a copy of any records and notifications required under Condition 30.3d.

30.4 When the primary analyzer requires recalibrations or repairs under Condition 30.3c, use the secondary analyzer for all measurements required under this permit. Follow all requirements listed in Condition 30.3.

31. **Limit to Avoid Classification as PSD-Major for $SO_2$.** The Permittee shall limit Akutan's $SO_2$ emissions to less than 250 tons in any 12 consecutive months. Monitor, record, and report as follows.

31.1 By the 15th of each month, calculate the previous months monthly total $SO_2$ emissions for each unit authorized to operate during the selected phase(s) for that month as follows:

a. Except as indicated in Condition 31.1b, calculate and record the monthly $SO_2$ emissions using Equation 10.

**Equation 10** $$SO_2 = TC \times EF \times \frac{1\,ton}{2000\,lb}$$

Where:
- $SO_2$ = $SO_2$ emissions in tons per month;
- $TC$ = Fuel consumption in gallons per month for each unit (measured or calculated in accordance with Condition 27.1a); and
- $EF$ = $SO_2$ emission factor in pounds per gallon, using an appropriate emission factor based on the fuel sulfur limit described in Condition 34.

b. For any specific unit, the Permittee may use the PTE for the unit listed in Exhibit B as monthly $SO_2$ emissions.

c. The Permittee may recalculate the PTE for each unit listed in Exhibit B using the actual fuel sulfur content allowed under Condition 34 and use the recalculated PTE as monthly $SO_2$ emissions for a given unit.

31.2 Add the monthly $SO_2$ emission for all units calculated under Condition 31.1 to obtain the stationary source monthly total. Add the monthly stationary source total to the stationary source total for the previous 11 months to determine the 12 consecutive month total for the stationary source.

31.3 Report as excess emissions as described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 if the $SO_2$ emissions calculated under Condition 31.2 exceed 250 tpy.

31.4 Include in the operating report in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50 the monthly and 12-consecutive month total $SO_2$ emissions for the stationary source under Condition 31.2.

# *Section 4 Ambient Air Quality Requirements*

## General Provisions – All Phases

32. In order to protect the annual average $NO_2$ AAAQS and increment; the 3-hr, 24-hr, and annual average $SO_2$ AAAQS and increment; the 24-hr PM-10 AAAQS; and the 24-hr and annual average PM-10 increment, the Permittee shall:

    32.1 Construct and maintain:

        a. Exhaust stacks that meet the minimum stack height requirements listed in Table 9. Compliance with the minimum stack height is required prior to initial startup of the associated emission unit. Submit the initial compliance demonstration described in Condition 32.2 for all stack changes.

        b. Vertical, uncapped exhaust stacks for all fuel-burning emission units listed in the permit. This condition does not preclude the use of flapper valve rain covers, or other similar designs, that do not hinder the vertical momentum of the exhaust plume.

    32.2 In addition to the stack demonstrations specifically listed in this permit, demonstrate compliance with the stack requirements in Condition 32.1 upon Department request. Demonstrations shall include as-built drawings and photographs.

**Table 9 – Minimum Stack Height Requirements [a]**

| Unit | | | Minimum Stack Height Above Grade (m) |
|---|---|---|---|
| ID | Name | Description | |
| 1 | Pollock Generator #4 | Caterpillar D3516B | 24.4 |
| 2a | Cod Generator #1 | Caterpillar D3512B | 26.3 |
| 3a | Cod Generator #2 | Caterpillar D3512B | 26.3 |
| 4b | Pollock Generator #1 | Caterpillar D3516B | 25.9 |
| 4c | Pollock Generator #1 | Caterpillar C175-16 | 25.9 |
| 5a | Pollock Generator #2 | Caterpillar D3512B | 21.3 |
| 5b | Pollock Generator #2 | Caterpillar D3516B | 24.4 |
| 6a | Pollock Generator #3 | Caterpillar D3512B – 1,240 ekW | 21.3 |
| 6b | Pollock Generator #3 | Caterpillar D3512B – 1,360 ekW | 21.3 |
| 6c | Pollock Generator #3 | Caterpillar C175-16 | 25.9 |
| 7b | Cod Generator #3 | Caterpillar D3512B | 26.3 |
| 8 | Pollock Boiler #1 | CB NCB 100-400 | 27.5 |
| 9 | Pollock Boiler #2 | CB NCB 100-400 | 27.5 |
| 10 | Cod Boiler #1 | Johnston 516 AC | 21.5 |
| 11 | Cod Boiler #2 | Johnston 516 AC | 21.5 |
| 12 | Fish Meal Dryer | Pedar Halvorsen Furnace | 27.5 |
| 23a | Boiler | CB 200-500-150 | 21.3 |
| 24 | Boiler | Falcon Boiler | 11.2 |
| 25 | Sealand Engine | Detroit Series 60 | 7.6 |
| 26 | Compressor Engine | Caterpillar 3508B | 21.8 |
| 27 | Freshwater Pump House Gen | Caterpillar D3512A | 9.3 |
| 28a | Cod Generator #4 | Caterpillar D3512B | 24.7 |
| 29a | Cod Generator #5 | Caterpillar D3512B | 24.5 |
| 30 | Trash Incinerator | Therm Tec G-50 | 8.7 |
| 31 | Portable Generator | Detroit Diesel 60 | 7.6 |
| 32 | Portable Generator | Detroit Diesel 60 | 7.6 |
| 33 | Cod Generator #6 | Caterpillar D3516B | 26.1 |
| 34 | Cod Generator #7 | Caterpillar D3516B | 26.1 |

[a] Table 9 lists emission units that may exist during any of the phases (Phase 0 through Phase 4). A required stack height is only applicable when the associated emission unit is present (i.e., the stack height requirement is not applicable prior to installation, or upon removal, of the associated emission unit).

33. In order to protect the annual $NO_2$ air quality standard and increment, comply with the $NO_X$ PSD-avoidance limit in Condition 27.

34. In order to protect the 3-hr, 24-hr, and annual $SO_2$ air quality standard and increment, the fuel sulfur content or the combined fuel sulfur content of fuel blends may not exceed 0.0015 percent, by weight except as follows

34.1 The fuel sulfur content or the combined fuel sulfur content of fuel blends for EU IDs 8, 9, 12, and 23a may not exceed 0.1 percent, by weight.

## Fuel Monitoring Provisions

35. The Permittee shall monitor fuel sulfur as follows:

35.1 Obtain a statement or receipt from the fuel supplier certifying the maximum sulfur content of the fuel for each shipment of fuel delivered to the Plant. If a certified statement or receipt is not available from the supplier, analyze a representative sample of any fuel added to any tank at the plant in accordance with Condition 35.2.

35.2 If required under this permit to determine the sulfur content of fuel oil, used oil, or fish oil, use ASTM method D129-00, D1266-98, D1552-95, D2622-98, D4294-98, D4045-99, or D-4294.

35.3 Except as indicated in Condition 35.3a, calculate and record the sulfur content, by weight, of the fuel in each tank (Tanks 1 through 6), after each time fuel is added to a tank, using Equation 11.

**Equation 11** $$S_T = \frac{(Q_{F1} \times S_{F1}) + (Q_{F2} \times S_{F2}) + (Q_{F3} \times S_{F3})}{(QF1 + QF2 + QF3)}$$

Where:
- $Q_{F1}$ = Quantity of Fuel 1 delivered
- $S_{F1}$ = Sulfur content of Fuel 1, percent sulfur by weight
- $Q_{F2}$ = Quantity of Fuel 2 (fuel in tank before delivery
- $S_{F2}$ = Sulfur content of Fuel 2, percent sulfur by weight
- $Q_{F3}$ = Quantity of Fuel 3 (lower sulfur fuel as needed to meet applicable sulfur limit)
- $S_{F3}$ = Sulfur content of Fuel 3, percent sulfur by weight
- $S_T$ = Sulfur content of blended fuel in the tank, percent sulfur by weight

a. If the sulfur content of any diesel fuel delivery is less than the applicable limits specified in Condition 34, then Trident may elect to assume the fuel in all tanks to which that fuel is added is the same as the maximum of any fuel added to that tank in the previous 12 months, and may forego fuel sulfur calculations in Condition 35.3.

b. Keep records of statements or receipts from the fuel supplier showing sulfur content and quantity of each shipment of fuel under Condition 35.1, results of each sulfur measurement required under Condition 35.2, and each fuel sulfur calculation for each tank conducted under Condition 35.3.

36. Monitor the fuel consumption rate for Emission Unit 30 (incinerator) as follows:

36.1 Record the calender day fuel consumption measured by the fuel meter required in Condition 27.1, and the daily hour of operation on the incinerator.

36.2 Calculate and record the daily average fuel consumption rate in gph.

37. Report as excess emissions in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50,

    37.1 any time the fuel sulfur content calculated under Condition 35 of any fuel consumed at the Plant exceeds an applicable limit listed in Condition 34; and

    37.2 any time the calendar day average fuel consumption rate for Emission Unit 30 calculated under Condition 36.2 exceeds 19.0 gph.

38. Include in the operating report described in the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50:

    38.1 the records required under Condition 34.

    38.2 the records required under Condition 35;

    38.3 a monthly summary of the records required under Condition 36.2; and

    38.4 a list of the notifications submitted during the reporting period.

## *Section 5 State Emission Standards*

39. **Industrial Process and Fuel-Burning Equipment Visible Emissions.** The Permittee shall not cause or allow visible emissions, excluding water vapor, emitted from the new and modified emission units authorized by this minor permit to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

    39.1 Conduct an initial visible emission surveillance for each new and modified emission unit within 30 days of modification or installation, following 40 C.F.R. 60, appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a). Conduct observations for 18 minutes to obtain 72 consecutive 15-second opactiy observations, and use the Visible Emissions Field Data Sheet and Visible Emissions Observation Record included in the attachments. Include copies of the observation records in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

    39.2 Include copies of the source test results in accordance with the applicable operating permit issued for the source under AS 46.14.130(b) and 18 AAC 50.

40. **Industrial Process and Fuel-Burning Equipment Particulate Matter**. The Permittee shall not cause or allow PM emissions from new and modified emission units authorized by this minor permit to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

    40.1 Conduct an initial PM test for each new and modified emission unit within 30 days of modification or installation, following 40 C.F.R. 60, Appendix A-4, Method 5, adopted by reference in 18 AAC 50.040(a).

41. **Sulfur Compound Emissions.** In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as $SO_2$ from new and modified emission units authorized by this minor permit to exceed 500 ppm corrected to standard conditions and averaged over three hours.

    41.1 The Permittee shall comply with Condition 41 by complying with Conditions 34 through 35, as applicable.

## *Section 6 Emission Fees*

42. **Assessable Emissions**. The Permittee shall pay to the Department annual emission fees based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410. The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of:

42.1 the stationary source's assessable potential to emit of 524 tpy; or

42.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another twelve-month period approved in writing by the Department, when demonstrated by:

(i) an enforceable test method described in 18 AAC 50.220;

(ii) material balance calculations;

(iii) emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

(iv) other methods and calculations approved by the Department**.**

43. **Assessable Emission Estimates.** Emission fees will be assessed as follows:

43.1 no later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., PO Box 111800, Juneau, AK 99811-1800; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

43.2 if no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in Condition 42.1.

44. **Annual Compliance Fee.** For a stationary source not classified as needing a Title V permit, the Permittee shall pay an annual compliance fee as set out in 18 AAC 50.400(e)(1), to be paid for each period from July 1 through the following June 30.

## *Section 7 Standard Permit Conditions*

45. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

    45.1 an enforcement action; or

    45.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.

46. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

47. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

48. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

49. The permit does not convey any property rights of any sort, nor any exclusive privilege.

## *Section 8 Permit Documentation*

| | |
|---|---|
| September 7, 2012 | Modeling anaylsis for $SO_2$ submitted to the Department. |
| August 7, 2012 | The Department requested a modeling analysis for $SO_2$ due to the increase in sulfur content for select emission units. |
| May 8, 2012 | Minor Permit Application for AQ0231MSS03 received from Trident requesting changes for the used oil authorization, fish oil authorization, and fuel sulfur limit |

# EXHIBITS AND FIGURES

## Exhibit A– Uncontrolled $NO_X$ Emission Factors and Monthly Potential to Emit

### Table A 1 – Low-$NO_X$ Mode Setting

| Unit ID | Unit Description | Uncontrolled $NO_X$ EF based on % load (lb/gal) | | | | | | | Design Fuel Consumption @ 100% load (gph) | $NO_X$ PTE (tpm) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤50 | 51 – 70 | 70 | 71 - 84 | 85 | 86 - 99 | 100 | | |
| 1, 4b, 5b, 33, 34 | Caterpillar Model D3516B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,655 kW) | 0.233 | 0.236 | 0.236 | 0.246 | 0.246 | 0.246 | 0.239 | 118.6 | 10.3 |
| 2a, 3a, 5a, 6b, 7b, 28a, 29a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,360 kW) | 0.242 | 0.242 | 0.209 | 0.209 | 0.204 | 0.208 | 0.208 | 98.9 | 7.5 |
| 6a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,240 kW) | 0.252 | 0.252 | 0.217 | 0.217 | 0.205 | 0.205 | 0.203 | 88.4 | 6.5 |
| 8, 9 | Cleaver Brooks Model 400 Steam Boiler | n/a | n/a | n/a | n/a | n/a | n/a | 0.0200 | 122.2 | 0.9 |
| 10, 11 | Johnston Steam Boiler | n/a | n/a | n/a | n/a | n/a | n/a | 0.0200 | 37.3 | 0.3 |
| 12 | Pedar Halvorsen Furnace | n/a | n/a | n/a | n/a | n/a | n/a | 0.0200 | 252.6 | 1.8 |
| 23a | Cleaver Brooks Model 500 Steam Boiler | n/a | n/a | n/a | n/a | n/a | n/a | 0.0200 | 153.3 | 1.1 |
| 24 | Falcon Boiler | n/a | n/a | n/a | n/a | n/a | n/a | 0.0200 | 7.4 | 0.1 |
| 25, 31, 32 (& replacements) | Portable Diesel Electric Generator | n/a | n/a | n/a | n/a | n/a | n/a | 0.400 | 18.7 | 27 |
| 26 | Caterpillar Model D3508B Twin Turbo Compressor Engine | 0.203 | 0.203 | 0.203 | 0.203 | n/a | n/a | n/a | 62.6 (79% load) | 4.6 |
| 27 | Caterpillar D3512A | 0.335 | 0.373 | 0.373 | 0.373 | 0.356 | 0.356 | 0.305 | 85.7 | 9.5 |
| 28, 29 | Caterpillar D379 | n/a | n/a | n/a | n/a | n/a | n/a | 0.222 | 31.0 | 2.5 |
| 4c, 6c | Caterpillar C175-16 Diesel Electric Generator (2,250 kW) | 0.2935 | 0.2935 | 0.2935 | 0.2935 | 0.2935 | 0.2935 | 0.2935 | 156.2 | 16.7 |

## Table A 2 –Fuel Economy Mode Setting

| Unit ID | Unit Description | Uncontrolled $NO_X$ EF based on % load (lb/gal) | | | | | | | | | | Design Fuel Consumption @ 100% load (gph) | $NO_X$ PTE (tpm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤50 | 51 – 69 | 70 | 71 - 74 | 75 | 76 - 79 | 80 | 81 - 89 | 90 | 91 - 99 | 100 | |
| 1, 4b, 5b, 33, 34 | Caterpillar Model D3516B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,655 kW) | 0.516 | 0.516 | 0.513 | 0.517 | 0.517 | 0.540 | 0.540 | 0.540 | 0.525 | 0.525 | 0.474 | 109.0 | 18.9 |
| 2a, 3a, 5a, . 6b, 7b, 28a, 29a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,360 kW) | 0.516 | 0.518 | 0.518 | 0.519 | 0.519 | 0.519 | 0.490 | 0.490 | 0.476 | 0.476 | 0.422 | 91.5 | 14.1 |
| 6a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,240 kW) | 0.550 | 0.550 | 0.544 | 0.544 | 0.525 | 0.525 | 0.518 | 0.518 | 0.479 | 0.479 | 0.386 | 90.1 | 12.7 |
| 26 | Caterpillar Model D3508B Twin Turbo Compressor Engine | 0.440 | 0.440 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 48.2 (67% load) | 7.7 |
| 4c, 6c | Caterpillar C175-16 Diesel Electric Generator (2,250 kW) | | | | | | | | | | | | | |

## Exhibit B – $SO_2$ Emission Factors and Monthly Potential to Emit

### Table B 1 – Low$NO_X$ Mode Setting

| Unit ID | Unit Description | Design Fuel Consumption @ 100% load (gph) | $SO_2$ PTE, based on 0.0015 wt% fuel sulfur content[a] (tpm) |
|---|---|---|---|
| 1, 4b, 5b, 33, 34 | Caterpillar Model D3516B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,655 kW) | 118.6 | 0.009 |
| 2a, 3a, 5a, 6b, 7b, 28a, 29a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,360 kW) | 98.9 | 0.008 |
| 6a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,240 kW) | 88.4 | 0.007 |
| 8, 9 | Cleaver Brooks Model 400 Steam Boiler | 122.2 | 0.656[b] |
| 10, 11 | Johnston Steam Boiler | 37.3 | 0.003 |
| 12 | Pedar Halvorsen Furnace | 252.6 | 1.355[b] |
| 23a | Cleaver Brooks Model 500 Steam Boiler | 153.3 | 0.823[b] |
| 24 | Falcon Boiler | 7.4 | 0.001 |
| 25, 31, 32 (& replacements) | Portable Diesel Electric Generator | 18.7 | 0.001 |
| 26 | Caterpillar Model D3508B Twin Turbo Compressor Engine | 62.6 (79% load) | 0.005 |
| 27 | Caterpillar D3512A | 85.7 | 0.007 |
| 28, 29 | Caterpillar D379 | 31.0 | 0.002 |
| 4c, 6c | Caterpillar C175-16 Diesel Electric Generator (2,250 kW) | 156.2 | 0.012 |

Table Notes

[a] Sulfur Emission Factor (EF) is 0.0002 lb $SO_2$ per gallon of fuel, assuming fuel density is 7.1 pounds of fuel per gallon. $SO_2$ PTE will change if fuel sulfur content is different than 0.0015 wt% S, if the fuel density is different than 7.1 lb/gal, and/or if design fuel consumption at 100% load changes due to engine configuration setting changes (e.g., low-$NO_X$ mode vs. fuel economy mode settings).

[b] Sulfur EF is 0.0147 lb $SO_2$ per gallon of fuel, assuming fuel density is 7.1 poulnds of fuel per gallon.

The department calculated $SO_2$ monthly PTE in this table as follows:

$$gal/hr \times 8{,}760 hr/yr \times yr/12 mo \times EF \times ton/2000 lb$$

## Table B 2 –Fuel Economy Mode Setting

| Unit ID | Unit Description | Design Fuel Consumption @ 100% load (gph) | $SO_2$ PTE, based on 0.0015 wt% fuel sulfur content[a] (tpm) |
|---|---|---|---|
| 1, 4b, 5b, 33, 34 | Caterpillar Model D3516B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,655 kW) | 109.0 | 0.008 |
| 2a, 3a, 5a, 6b, 7b, 28a, 29a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,360 kW) | 91.5 | 0.007 |
| 6a | Caterpillar Model D3512B Quad Turbo Low $NO_x$ Diesel Electric Generator (1,240 kW) | 90.1 | 0.007 |
| 26 | Caterpillar Model D3508B Twin Turbo Compressor Engine | 48.2 (67% load) | 0.004 |
| 4c, 6c | Caterpillar C175-16 Diesel Electric Generator (2,250 kW) | | |

Table Notes

[a] Sulfur Emission Factor (EF) is 0.0002 lb $SO_2$ per gallon of fuel, assuming fuel density is 7.1 pounds of fuel per gallon. $SO_2$ PTE will change if fuel sulfur content is different than 0.0015 wt% S, if the fuel density is different than 7.1 lb/gal, and/or if design fuel consumption at 100% load changes due to engine configuration setting changes (e.g., low-$NO_X$ mode vs. fuel economy mode settings).

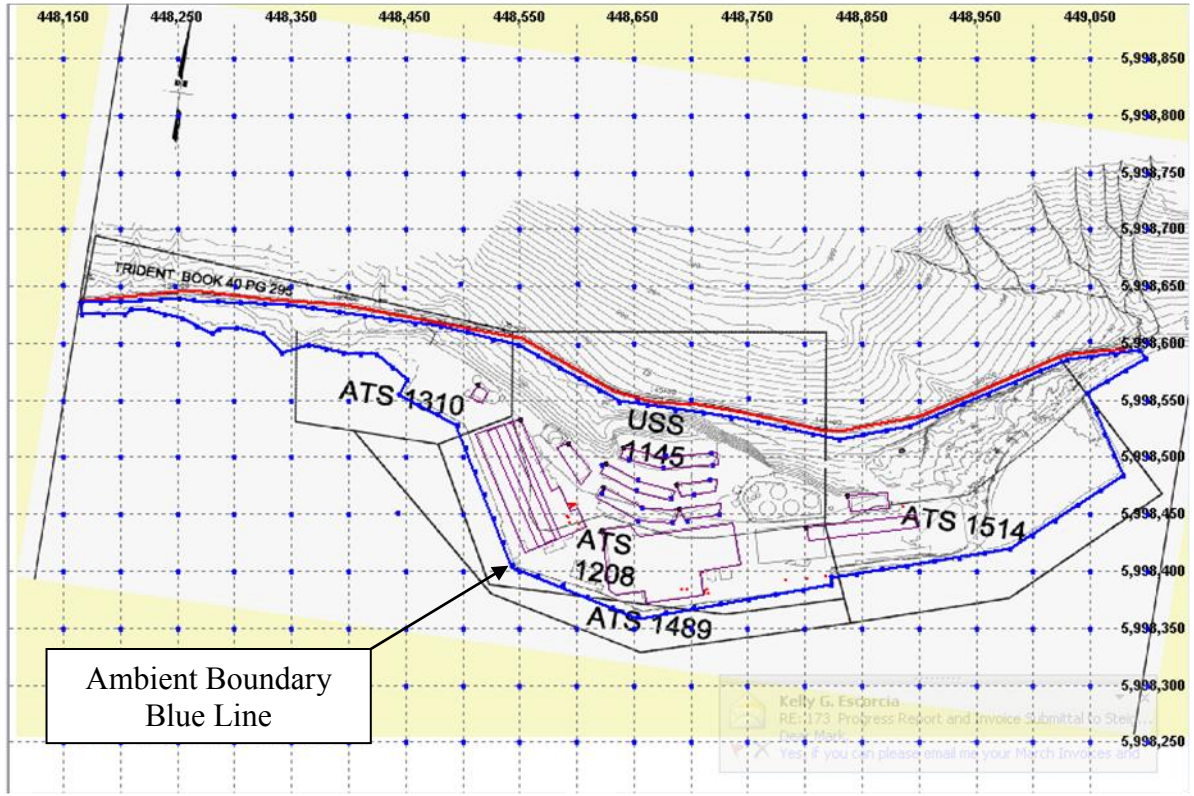
The department calculated $SO_2$ monthly PTE in this table as follows:

$$gal/hr \times 8{,}760 hr/yr \times yr/12 mo \times EF \times ton/2000 lb$$

# Figure 1 – Trident Akutan Ambient Air Boundary

.

Attachment A



## Visible Emissions Field Data Sheet

Certified Observer: _____

Company & Stationary Source: _____

Location: _____

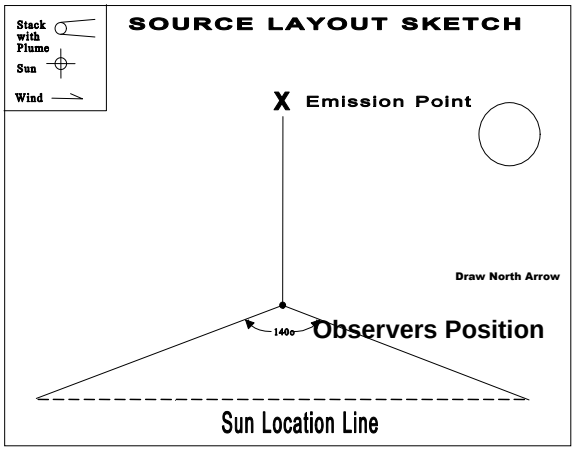
Test No.: _____ Date: _____

Emission Unit: _____

Production Rate/Operating Rate: _____

Unit Operating Hours: _____

Hrs. of observation: _____




| Clock Time | Initial | | | | Final |
|---|---|---|---|---|---|
| Observer location<br>Distance to discharge | | | | | |
| Direction from discharge | | | | | |
| Height of observer point | | | | | |
| Background description | | | | | |
| Weather conditions<br>Wind Direction | | | | | |
| Wind speed | | | | | |
| Ambient Temperature | | | | | |
| Relative humidity | | | | | |
| Sky conditions: (clear, overcast, % clouds, etc.) | | | | | |
| Plume description:<br>Color | | | | | |
| Distance visible | | | | | |
| Water droplet plume?<br>(Attached or detached?) | | | | | |
| Other information | | | | | |

**Visible Emissions Observation Record**

Page _____ of _____

Company & Stationary Source _____ Certified Observer _____

Test Number Clock Time

| Date: | | Visibility reduction every 15 Seconds (Opacity) | | | | Steam Plume (check if applicable) | | Comments |
|---|---|---|---|---|---|---|---|---|
| Hr | Min | 0 | 15 | 30 | 45 | Attached | Detached | |
| | | | | | | | | |
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Additional information:

_____ _____

Observer Signature and Date Certified By and Date

**Data Reduction:**

Duration of Observation Period (minutes): _____ Duration Required by Permit (minutes) _____
Number of Observations _____ Highest Six –Minute Average Opacity (%) _____
Number of Observations exceeding 20% _____
In compliance with three-minute aggregate opacity limit? (Yes or No) _____
In compliance with six-minute opacity limit? (Yes or No) _____

**Average Opacity Summary**

| Set Number | Time Start—End | Opacity | |
|---|---|---|---|
| | | Sum | Average |
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