

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONTROL MINOR PERMIT

Permit No AQ1077MSS04
Rescinds Permit No AQ1077MSS02

Preliminary – August 24, 2016

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit No. AQ1077MSS04 to the Permittee listed below.

Permittee: U.S. Army Garrison, Fort Greely
P.O. Box 31310
Fort Greely, AK 99731
(907) 873-4582

Owner and Operator: Same as Permittee

Stationary Source: Fort Greely National Security (**Non-Privatized Emission Units**)

Location of FGG: Latitude: 63° 58" North; Longitude 145° 43" West

Physical Address: U.S. Army Garrison, Fort Greely; South of Delta Junction, bordering Richardson Hwy to the west, 100 miles southeast of Fairbanks, AK.

Source Contact: Christine Boerst, Director of Public Works; (907) 873-4665

Project: Transfer of Two Emergency Generators

This project is classified under 18 AAC 50.508(6) for revising or rescinding the terms and conditions of a Title I permit.

This permit satisfies the obligations of the Permittee to obtain a minor permit under 18 AAC 50. As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this minor permit.

John F. Kuterbach, Manager
Air Permits Program

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Section 1 Emission Unit Inventory

1. **Emissions Units (EUs) Authorization.** The Permittee is authorized to install and operate the EUs listed in Table 1 in accordance with the terms and conditions of this permit and the minor permit application. Except as noted elsewhere in this permit, the information in Table 1 is for identification purposes only. The specific EU descriptions do not restrict the Permittee from replacing an EU identified in Table 1. The Permittee shall comply with all applicable provisions of AS 46.14 and 18 AAC 50 when installing a replacement EU, including any applicable minor or construction permit requirements.

Table 1 – Minor Permit Emission Unit Inventory

| EU ID | Equipment Type | Make | Model | Capacity |
|---------------------------------|-----------------------|--------------|---------------------|-----------------------------|
| Boilers and Furnaces | | | | |
| FGBF07 | Furnace | Powrmatic | UH140 | 140,000 Btu/hr |
| FGBF08 | Furnace | Powrmatic | UH140 | 140,000 Btu/hr |
| FGBF09 | Furnace | Magic Chef | L13-450-1 | 450,000 Btu/hr |
| FGBF11 | Furnace | Miller | CMF800-PO | 160,000 Btu/hr |
| FGBF12 | Furnace | McClean | | 130,000 Btu/hr |
| FGBF21 | Furnace | Armstrong | L83HFD84/95 E12-1 A | 95,000 Btu/hr |
| FGBF22 | Furnace/Heater | Modine | POR100 | 300,000 Btu/hr ¹ |
| FGBF23 | Boiler | Weil-McClain | A/B-WTGO-8 | 290,000 Btu/hr |
| FGBF24 | Boiler | Weil-McClean | A/B-WTGO-8 | 290,000 Btu/hr |
| Diesel Gensets and Pumps | | | | |
| FGIC01 | Genset | Detroit | 6063HK35 | 635 hp |
| FGIC03 | Genset | Cummings | 100D34 | 310 hp |
| FGIC04 | Genset | Kohler | 100R02 | 160 hp |
| FGIC14 | Genset | John Deere | 250REOZJE | 385 hp |

2. **Maintenance.** The Permittee shall maintain equipment according to manufacturer's or operator's maintenance procedures.

¹ Three identical units at 100,000 btu/hr each

Section 2 Fee Requirements

3. **Administration Fees.** The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-403.
4. **Assessable Emissions.** The Permittee shall pay to the Department an annual emission fee 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(b). 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 (tpy). The quantity for which fees will be assessed is the lesser of:
 - 4.1 the stationary source's assessable potential to emit of 18 tpy; or
 - 4.2 the stationary source's projected annual rate of emissions that will occur from July 1st to the following June 30th, based upon actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the Department, when demonstrated by:
 - a. an enforceable test method described in 18 AAC 50.220;
 - b. material balance calculations;
 - c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or
 - d. other methods and calculations approved by the Department.
5. **Assessable Emission Estimates.** Emission fees will be assessed as follows:
 - 5.1 no later than March 31st 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., Suite 303, PO Box 111800, Juneau, AK 99801-1800; 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
 - 5.2 if no estimate is received on or before March 31st of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in Condition 4.1.
6. **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(d), to be paid for each period from July 1st through the following June 30th.

Section 3 State Emission Standards

7. **Visible Emissions (VE) Standards.** The Permittee shall not cause or allow VE, excluding condensed water vapor, emitted from any EU listed in Table 1 to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.
- 7.1 Observe exhaust of EU FGIC14 for 18 minutes within six months after the issue date of this permit or the date of initial operation, whichever is later, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations. Keep records as indicated in condition 9.1a and report as indicated in Condition 10.1b.
- 7.2 If EU ID FGIC01, FGIC03, or FGIC04 exceed a 12-month rolling operating hour threshold listed in Table 2, monitor, record, and report for that EU in accordance with Conditions 8 – 10.²

Table 2 – Emission Unit Thresholds

| EU ID | 12-Month Rolling Operating Hours |
|--------------|---|
| FGIC01 | 420 |
| FGIC03 | 415 |
| FGIC04 | 805 |

8. **VE Monitoring.** The Permittee shall observe the exhaust of EUs FGIC14 for VE using either the Method 9 Plan under Condition 8.1 or the Smoke/No-Smoke Plan under Condition 8.2. The Permittee may change VE plans for an EU at any time unless prohibited from doing so by Condition 8.3. The Permittee may, for each unit, elect to continue the VE monitoring schedule in effect from the previous permit.
- 8.1 **Method 9 Plan.** For all 18-minute observations in this plan, observe exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.
- a. First Method 9 Observation. Observe exhaust for 18 minutes within six months after the issue date of this permit. For any EU, observe exhaust for 18 minutes within 14 calendar days after changing from the Smoke/No-Smoke Plant of Condition 8.2
- (i) For any EU that has been replaced, observe exhaust for 18 minutes within 30 days of startup.

² Although the Title I program does not have the insignificant emission unit designation, the Department is using its discretion to simplify ongoing VE compliance for small engines as given in Condition 7.2 per the thresholds contained in Table 2.

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- (ii) If EU FGIC01, FGIC03, or FGIC04 exceed the operational threshold in Table 2, observe the EU's exhaust for 18 minutes of operation within 30 days after the calendar month during which that threshold has been exceeded, or within 30 days of the EU's next scheduled operation, whichever is later.
 - b. Monthly Method 9 Observations. After the first Method 9 observation, perform 18-minute observations at least once in each calendar month that an EU operates.
 - c. Semiannual Method 9 Observations. After observing emissions for three consecutive operating months under Condition 8.1a(i), unless a six-minute average is greater than 15 percent and one or more observations are greater than 20 percent, perform 18 minutes observation:
 - (i) within six months after the preceding observations; or
 - (ii) for an EU with intermittent operations, during the next scheduled operation immediately following six months after the preceding observation.
 - d. Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six-minute average is greater than 15 percent and one or more individual observations are greater than 20 percent, perform 18-minute observations:
 - (i) within 12 months after the preceding observations; or
 - (ii) for an EU with intermittent operations, during the next scheduled operation immediately following 12 months after the preceding observation.
 - e. Increased Method 9 Frequency. If a six-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more observations are greater than 20 percent, then increase or maintain the 18-minute observation frequency for that EU to at least monthly intervals as described in Condition 8.1b, until the criteria in Condition 8.1c for semiannual monitoring are met.
- 8.2 **Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of VE, excluding condensed water vapor.
- a. Initial Monitoring Frequency. Observe the exhaust during each calendar day that an EU operates.
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- b. Reduced Monitoring Frequency. After an EU has been observed on 30 consecutive operating days, if the EU operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that the EU operates.
- c. Smoke Observed. If smoke is observed, either begin the Method 9 Plan of Condition 8.1 or perform the corrective action required under Condition 8.3.

8.3 Corrective Actions Based on Smoke/No Smoke Observations. If VE are present in the exhaust of an EU during an observation performed under the Smoke/No Smoke Plan of Condition 8.2, then the Permittee shall either follow the Method 9 Plan of Condition 8.1 or

- a. initiate actions to eliminate smoke from the EU within 24 hours of the observation;
- b. keep a written record of the starting date, the completion date, and a description of the actions taken to reduce smoke; and
- c. after completing the actions required under Condition 8.3a,
 - (i) take Smoke/No Smoke observations in accordance with Condition 8.2
 - (A) at least once per day for the next seven operating days and until the initial 30 day observation period is completed; and
 - (B) continue as described in Condition 8.2b; or
 - (ii) if the actions taken under Condition 8.3a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of Condition 8.3c(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under Condition 8.2a.

9. VE Recordkeeping. The Permittee shall keep records as follows:

9.1 If using the Method 9 Plan of Condition 8.1

- a. the observer shall record
 - (i) the name of the stationary source, EU and location, EU type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet in Attachment 1;

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- (ii) the time, estimated distance to the emissions location, sun location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), plume background, and operating rate (load or fuel consumption rate or best estimate if unknown) on the sheet at the time opacity observations are initiated and completed;
 - (iii) the presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made;
 - (iv) opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation Form in Attachment 1, and
 - (v) the minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period;
 - b. to determine the six-minute average opacity, divide the observations recorded on the record sheet into sets of 24 consecutive observations; sets need not be consecutive in time and in no case shall two sets overlap; for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; record the average opacity on the sheet;
 - c. calculate and record the highest 18-consecutive-minute averages observed.
- 9.2 If using the Smoke/No Smoke Plan of Condition 8.2, record the following information in a written log for each observation and submit copies of the recorded information upon request of the department:
- a. the date and time of the observation;
 - b. from Table 1, the identification number of the EU observed;
 - c. whether VE are present or absent in the exhaust;
 - d. a description of the background to the exhaust during the observation;
 - e. if the EU starts operation on the day of the observation, the startup time of the EU;
 - f. name and title of the person making the observation; and
 - g. operating rate (load or fuel consumption rate or best estimate if unknown).

10. **VE Reporting.** The Permittee shall report VE as follows:

10.1 include in each operating report under Condition 33

- a. which VE plan of Condition 8 was used for each EU; if more than one plan was used, give the time periods covered by each plan;
- b. for each EU under the Method 9 Plan,
 - (i) copies of the observation results (i.e. opacity observations) for each EU that used the Method 9 Plan, except for the observations the Permittee has already supplied to the Department; and
 - (ii) a summary to include:
 - (A) number of days observations were made;
 - (B) highest six-minute average observed; and
 - (C) dates when one or more observed six-minute averages were greater than 20 percent;
- c. for each EU under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoke was observed; and
- d. a summary of any monitoring or record keeping required under Conditions 7 – 9 that was not done;

10.2 report under Condition 32:

- a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and
- b. if any monitoring under Conditions 7 or 8 was not performed when required, report within three days of the date the monitoring was required.

11. **Particulate Matter (PM) Emission Standard.** The Permittee shall not cause or allow particulate matter emitted from all EUs listed in Table 1 to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

11.1 Monitor, record and report in accordance with Conditions 12 - 14.

12. **PM Monitoring of Diesel Engines.** The Permittee shall conduct source tests on diesel engines, FGIC01, FGIC03, FGIC04, and FGIC14, to determine the concentration of PM in the exhaust of an EU in accordance with this Condition 12.

12.1 Within six months of exceeding the criteria of Conditions 12.2a or 12.2b, either

- a. conduct a PM source test according to requirements set out in Section 5; or

- b. make repairs so that emissions no longer exceed the criteria of Condition 12.2; to show that emissions are below those criteria, observe emissions as described in Condition 8.1 under load conditions comparable to those when the criteria were exceeded.

12.2 Conduct the test according to Condition 12.1 if

- a. 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or
- b. for a EU with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.

12.3 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.

13. **PM Recordkeeping for Diesel Engines.** The Permittee shall keep records of the results of any PM testing and VE observations conducted under Condition 12.

14. **PM Reporting for Diesel Engines.** The Permittee shall report as follows:

14.1 report under Condition 32

- a. the results of any PM source test that exceeds the PM emissions limit; or
- b. if one of the criteria of Condition 12.2 was exceeded and the Permittee did not comply with either Condition 12.1a or 12.1b, this must be reported by the day following the day compliance with Condition 12.1 was required;³

14.2 report observations in excess of the threshold of Condition 12.2b within 30 days of the end of the month in which the observations occur;

14.3 in each stationary source operating report under Condition 33, include

- a. the dates, EU ID number(s), and results when an observed 18-minute average was greater than an applicable threshold in Condition 12.2;
- b. a summary of the results of any PM testing under Condition 12; and
- c. copies of any VE observation results (opacity observations) greater than the thresholds of Condition 12.2, if they were not already submitted.

³ This means no later than six months and one day after either of the criteria in Condition 12 is exceeded.

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15. **PM Monitoring of Liquid-Fired Boilers.** The Permittee shall conduct source tests on EUs FGBF23 and FGBF24 to determine the concentration of PM in the exhaust of EUs FGBF23 and FGBF24 as follows:
- 15.1 Except as allowed in Condition 15.3, conduct a PM source test according to the requirements set out in Section 5 no later than 90 calendar days after any time corrective maintenance fails to eliminate VE greater than the 20 percent opacity threshold for two or more 18-minute observations in a consecutive six-month period.
- 15.2 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the average opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.
- 15.3 The PM source test requirement in Condition 15.1 is waived for an EU if the Permittee takes corrective action and conducts two 18-minute VE observations in a consecutive six-month period to show that the excess VE described in Condition 15.1 no longer occur.
16. **PM Recordkeeping for Liquid-Fired Boilers.** The Permittee shall keep records of the results of any PM testing and VE observations conducted under Condition 15.
17. **PM Reporting for Liquid-Fired Boilers.** The Permittee shall report as follows:
- 17.1 In each operating report required by Condition 33, include
- the dates, EU ID number(s), and results when an 18-minute opacity observation was greater than the applicable threshold criterion in Condition 15.1;
 - a summary of the results of any PM testing and VE observations conducted under Condition 15.
- 17.2 Report as excess emissions, in accordance with Condition 32, any time the results of a source test for PM exceeds the PM emission limit stated in Condition 11.
18. **Sulfur Compound Emissions.** In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from any EU listed in Table 1 to exceed 500 parts per million by volume (ppmv) averaged over three hours.
- 18.1 The Permittee shall monitor, record, and report compliance with Condition 18 by complying with Condition 19 and its associated sub-conditions.

Section 4 Ambient Air Quality Protection Requirements

19. **Fuel Oil Sulfur Content:** The Permittee shall limit fuel oil sulfur content to no greater than 0.12 percent by weight for all fuel burning equipment listed in Table 1. Monitor, record, and report as follows:
 - 19.1 Keep receipts that specify fuel grade that meets the limit or the fuel sulfur content for each shipment of fuel;
 - 19.2 Include in the report required by Condition 33, a list of the fuel grades and fuel sulfur content received at the stationary source during the reporting period; and
 - 19.3 If the sulfur content of any fuel shipment exceeds 0.12 percent by weight, report under Condition 32.
20. **Annual Operating Hours for Generators:** The Permittee shall limit the operation of EUs FGIC01, FGIC03, FGIC04, and FGIC14 to no more than 1,500 hours each, per rolling 12-month period. Monitor, record, and report as follows:
 - 20.1 Equip EUs FGIC01, FGIC03, FGIC04, and FGIC14 with hour totalizers to monitor the daily hours of operation, and report the monthly and rolling 12-month hours of operation in the operating report required by Condition 33;
 - 20.2 For EUs FGIC01, FGIC03, FGIC04; and FGIC14, if the rolling 12-month hours of operation exceed the annual limit in Condition 20, report as excess emissions as described by Condition 32;
 - 20.3 If requested by the Department, calculate and maintain records of the monthly and cumulative rolling 12 month NO_x emissions, by using the appropriate condition contained in Section 7, for the fuel burning equipment listed in Table 1;
 - 20.4 If any of the EUs do not have fuel or hour monitoring requirements, then base NO_x emissions calculations under condition 20.3 for those units on constant operation for the period being calculated;
 - 20.5 If requested by the Department to calculate and maintain records of the NO_x emissions under Condition 20.3, report the monthly and cumulative rolling 12 month NO_x emissions, in the operating report required by Condition 33.

Section 5 General Source Test Requirements

21. **Requested Source Tests.** In addition to any source testing explicitly required by this permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.
22. **Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing
 - 22.1 at a point or points that characterize the actual discharge into the ambient air; and
 - 22.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.
23. **Reference Test Methods.** The Permittee shall use the following references for test methods when conducting source testing for compliance with this permit:
 - 23.1 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in 40 C.F.R. 60, Appendix A, Method 9. The Permittee may use the form in Attachment 1 of this permit to record data.
 - 23.2 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.
 - 23.3 Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.
 - 23.4 Source testing for emissions of any contaminant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63 Appendix A, Method 301.
24. **Test Deadline Extension.** The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.
25. **Test Plans.** Before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance, and must specify how the emissions unit will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete test plan at least 30 days before the scheduled date of any test unless the

Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

26. **Test Notification.** At least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and time the source test will begin.
27. **Test Reports.** Within 60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall certify the results as set out in Condition 28. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

Section 6 General Recordkeeping, Reporting, and Certification Requirements

28. **Certification.** The Permittee shall certify all reports, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.” Excess emissions reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.
29. **Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall send a copy of reports, compliance certifications, and other submittals required required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with Condition 28.
30. **Information Requests.** The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke, reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal administrator.
31. **Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:
- 31.1 copies of all reports and certifications submitted pursuant to this section of the permit; and
 - 31.2 records of all monitoring required by this permit, and information about the monitoring including (if applicable):
 - a. calibration and maintenance records, original strip chart or computer-based recordings for continuous monitoring instrumentation;
 - b. sampling dates and times of sampling or measurements;
 - c. the operating conditions that existed at the time of sampling or measurement;
 - d. the date analyses were performed;
 - e. the location where samples were taken;
 - f. the company or entity that performed the sampling and analyses;
 - g. the analytical techniques or methods used in the analyses; and
 - h. the results of the analyses

32. Excess Emissions and Permit Deviation Reports.

32.1 Except as provided in Condition 35, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

- a. In accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report
 - (i) emissions that present a potential threat to human health or safety; and
 - (ii) excess emissions that the Permittee believes to be unavoidable;
- b. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that caused emissions in excess of a technology based emissions standard;
- c. report all other excess emissions and permit deviations
 - (i) within 30 days of the end of the month in which emissions or deviation occurs or is discovered, except as provided in Condition 32.1c(ii) and 32.1c(iii);
 - (ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under 32.1c(i); and
 - (iii) for failure to monitor, as required in other applicable conditions of this permit.

32.2 When reporting either excess emissions or permit deviations, the Permittee must report using either the Department's on-line form which can be found at <http://www.dec.state.ak.us/air/ap/site.htm> or <https://myalaska.state.ak.us/dec/air/airtoolsweb/> or, if the Permittee prefers, the form contained in Attachment 2 of this permit. The Permittee must provide all information called for by the form that is used.

32.3 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

33. Operating Reports. During the life of this permit, the Permittee shall submit to the Department an original and two copies of an operating report by August 1st for the period January 1st to June 30th of the current year and by February 1st for the period July 1st to December 31st of the previous year.

33.1 The operating report must include all information required to be in operating reports by other conditions of this permit

33.2 If excess emissions or permit deviations that occurred during the reporting period are not included with the operating report under Condition 33.1, either

- a. The Permittee shall identify:
 - (i) the date of the deviation;
 - (ii) the equipment involved;

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- (iii) the permit condition affected;
 - (iv) a description of the excess emissions or permit deviation; and
 - (v) any corrective action or preventative measures taken and the date of such actions; or
 - b. when excess emissions or permit deviations have already been reported under Condition 32 the Permittee may cite the date or dates of those reports.
 - 34. **Inspection Access.** The Permittee shall allow the Department or an inspector authorized by the Department upon presentation of credentials and at reasonable times with the consent of the owner or operator to
 - 34.1 enter upon the premises where an emissions unit subject to this permit is located or where records required by the permit are kept;
 - 34.2 have access to and copy any records required by this permit
 - 34.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and
 - 34.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.
 - 35. **Air Pollution Prohibited.** No person may permit any emissions which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.
 - 35.1 If emissions present a potential threat to health or safety, the Permittee shall report any such emissions according to Condition 32.
 - 35.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of Condition 35.
 - 35.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if
 - a. after investigation because of complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of Condition 35; or
 - b. the Department notifies the Permittee that it has found a violation of Condition 35.
 - 35.4 The Permittee shall keep records of
 - a. the date and time, and nature of all emissions complaints received;
 - b. the name of the person or persons that complained, if known;
 - c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of Condition 35; and
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- d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.
- 35.5 With each operating report under Condition 33, the Permittee shall include a brief summary report which must include
- a. the number of complaints received
 - b. the number of times the Permittee or the Department found corrective action necessary;
 - c. the number of times action was taken on a complaint within 24 hours; and
 - d. the status of corrective actions the Permittee or department found necessary that were not taken within 24 hours.
- 35.6 The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.
36. **Good Air Pollution Control Practice.** The Permittee shall do the following for all EUs in Table 1:
- a. perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;
 - b. keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format; and
 - c. keep a copy of either the manufacturer's or the operator's maintenance procedures.
37. **Ongoing Stationary Source Certification.** As described in 18 AAC 50.544(d) the Permittee shall provide a certification in each semi-annual operating report required by Condition 33, that the stationary source is accurately described by the application and minor permit and the owner or operator has made no changes to the stationary source that would trigger a requirement for a new minor permit under 18 AAC 50.

Section 7 Emission Calculations

38. The Permittee shall use Department approved emission factors in Table 3 for the EUs contained in Table 1.

Table 3 – Emission Factor Summary

| EU ID | Emission Factor for NO _x | Source | Emission Factor for SO ₂ | Source | Emission Factor for CO | Source | Emission Factor for PM-10 | Source |
|--------|-------------------------------------|--------|-------------------------------------|---------------------------|------------------------|--------|---------------------------|--------|
| FGBF03 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF07 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF08 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF09 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF11 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF12 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF22 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF23 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGBF24 | 18lb /1000 gal | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 5.0 lb/ 1000 gal | AP 42 | 2.38lb/1000 gal | AP 42 |
| FGIC01 | 9.53 lb/hr | Vendor | 135(%S) /1000 gal | Mass Balance ¹ | 3.49 lb/hr | AP 42 | 0.572 lb/hr | Vendor |
| FGIC14 | 6.11 lb/hr | AP 42 | 135(%S) /1000 gal | Mass Balance ¹ | 1.32 lb/hr | AP 42 | 0.433 lb/hr | AP 42 |

1) SO₂ Mass Balance: Assumes 100% conversion to SO₂. Typical fuel density is 0.81 kg/l (6.75 lb/gal) per vendor fuel analyses provided to Fort Greely. (6.75lb/gal)(2)(%S/100)(1000) = 135 (%S) lb SO₂/1000 gal

39. The Permittee shall calculate the monthly emissions for each EU by the appropriate following equation:

39.1 For emissions units monitoring hours of operation:

$$NO_x = EF \times H \left(\frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

Equation 1

Where: NO_x = NO_x emissions in tons per month
H = the EUs operating hours for the month
EF = Department approved emission factor⁴

39.2 For emissions units monitoring fuel consumption:

⁴ See Condition 36

Equation 2

$$NO_x = EF \times H \left(\frac{1 \text{ ton}}{2000 \text{ lb}} \right)$$

Where: NO_x = NO_x emissions in tons per month
H = gallons of fuel consumed for the month
EF = Department approved emission factor⁴

40. Once per calendar month, the Permittee shall calculate the stationary source-wide monthly and rolling 12-month emissions for NO_x for as follows:
 - 40.1 Determine the sum all the monthly emissions as calculated in Condition 40 for all the EUs contained in Table 1.
 - 40.2 Determine the rolling 12-month emissions for all the EUs contained in Table 1 by summing all the calculated monthly emissions for all the EUs contained in Table 1, for the previous 12 months.

Section 8 Terms to Make Permit Enforceable

41. 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
 - 41.1 an enforcement action; or
 - 41.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.
42. 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.
43. 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.
44. 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.
45. The permit does not convey any property rights of any sort, nor any exclusive privilege.
46. Compliance with permit terms and conditions is considered to be compliance with those requirements that are
 - 46.1 included and specifically identified in the permit; or
 - 46.2 determined in writing in the permit to be inapplicable.

Section 9 Permit Documentation

| | |
|--------------------------|-----------------------------------|
| September 18, 2006 | Initial Application |
| May 21, 2007 | Revised Application |
| April 4, 2008 | Permit Revision Application |
| June 30, 2008 | Transfer of Ownership Forms |
| July 1, 2008 | Public notice until July 31, 2008 |
| July 23, 2008 | Public comments from Permittee |
| June 23, 2016 | Application Received |

Attachment 1 - Visible Emissions Form

VISIBLE EMISSION OBSERVATION FORM

This form is designed to be used in conjunction with EPA Method 9, “Visual Determination of the Opacity of Emissions from Stationary Sources.” Temporal changes in emission color, plume water droplet content, background color, sky conditions, observer position, etc. should be noted in the comments section adjacent to each minute of readings. Any information not dealt with elsewhere on the form should be noted under additional information. Following are brief descriptions of the type of information that needs to be entered on the form: for a more detailed discussion of each part of the form, refer to “Instructions for Use of Visible Emission Observation Form.”

- Source Name: full company name, parent company or division or subsidiary information, if necessary.
 - Address: street (not mailing or home office) address of facility where VE observation is being made.
 - Phone (Key Contact): number for appropriate contact.
 - Source ID Number: number from NEDS, agency file, etc.
 - Process Equipment, Operating Mode: brief description of process equipment (include type of facility) and operating rate, % capacity, and/or mode (e.g. charging, tapping, shutdown).
 - Control Equipment, Operating Mode: specify type of control device(s) and % utilization, control efficiency.
 - Describe Emission Point: for identification purposes, stack or emission point appearance, location, and geometry; and whether emissions are confined (have a specifically designed outlet) or unconfined (fugitive).
 - Height Above Ground Level: stack or emission point height relative to ground level; can use engineering drawings, Abney level, or clinometer.
 - Height Relative to Observer: indicate height of emission point relative to the observation point.
 - Distance from Observer: distance to emission point; can use rangefinder or map.
 - Direction from Observer: direction plume is traveling from observer.
 - Describe Emissions and Color: include physical characteristics, plume behavior (e.g., looping, lacy, condensing, fumigating, secondary particle formation, distance plume visible, etc.), and color of emissions (gray, brown, white, red, black, etc.). Note color changes in comments section.
 - Visible Water Vapor Present?: check “yes” if visible water vapor is present.
 - If Present, is Plume...: check “attached” if water droplet plume forms prior to exiting stack, and “detached” if water droplet plume forms after exiting stack.
 - Point in Plume at Which Opacity was Determined: describe physical location in plume where readings were made (e.g., 1 ft above stack exit or 10 ft. after dissipation of water plume).
 - Describe Plume Background: object plume is read against, include texture and atmospheric conditions (e.g., hazy).
 - Background Color: sky blue, gray-white, new leaf green, etc.
 - Sky Conditions: indicate cloud cover by percentage or by description (clear, scattered, broken, overcast).
 - Wind Speed: record wind speed; can use Beaufort wind scale or hand-held anemometer to estimate.
 - Wind Direction From: direction from which wind is blowing; can use compass to estimate to eight points.
 - Ambient Temperature: in degrees Fahrenheit or Celsius.
Wet Bulb Temperature: can be measured using a sling psychrometer
RH Percent: relative humidity measured using a sling psychrometer; use local US Weather Bureau measurements only if nearby.
 - Source Layout Sketch: include wind direction, sun position, associated stacks, roads, and other landmarks to fully identify location of emission point and observer position.
Draw North Arrow: to determine, point line of sight in direction of emission point, place compass beside circle, and draw in arrow parallel to compass needle.
Sun’s Location: point line of sight in direction of emission point, move pen upright along sun location line, mark location of sun when pen’s shadow crosses the observer’s position.
 - Observation Date: date observations conducted.
 - Start Time, End Time: beginning and end times of observation period (e.g., 1635 or 4:35 p.m.).
 - Data Set: percent opacity to nearest 5%; enter from left to right starting in left column. Use a second (third, etc.) form, if readings continue beyond 30 minutes. Use dash (-) for readings not made; explain in adjacent comments section.
Comments: note changing observation conditions, plume characteristics, and/or reasons for missed readings.
Range of Opacity: note highest and lowest opacity number.
 - Observer’s Name: print in full.
Observer’s Signature, Date: sign and date after performing VE observation.
 - Organization: observer’s employer.
- Certified By, Date: name of “smoke school” certifying observer and date of most recent certification.

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Attachment 2 - ADEC Notification Form

Excess Emissions and Permit Deviation Reporting
State of Alaska Department of Environmental Conservation
Division of Air Quality

Stationary Source Name

Air Quality Permit No.

Company Name

Date

When did you discover the Excess Emissions/Permit Deviation?

Date: ____ / ____ / ____

Time: ____ : / ____

When did the event/deviation?

Begin Date: ____ / ____ / ____ Time: ____ : ____ (Use 24-hr clock.)

End Date: ____ / ____ / ____ Time: ____ : ____ (Use 24-hr clock.)

What was the duration of the event/deviation? ____ : ____ (hrs:min) or ____ days
(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions Complete Section 1 and Certify

☐ Deviation from permit conditions complete Section 2 and certify

☐ Deviation from COBC, CO, or Settlement Agreement Complete Section 2 and certify

Section 1. Excess Emissions

(a) Was the exceedance ☐ Intermittent or ☐ Continuous

(b) Cause of Event (Check one that applies):

☐ Start Up/Shut Down

☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure

☐ Scheduled Maintenance/Equipment Adjustments

☐ Bad fuel/coal/gas

☐ Upset Condition

☐ Other

(c) Description

Describe briefly what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) Emission unit(s) Involved:

Identify the emission units involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

| <u>EU ID</u> | <u>Emission Unit Name</u> | <u>Permit Condition Exceeded/Limit/Potential Exceedance</u> |
|--------------|---------------------------|---|
| | | |

(e) Type of Incident (please check only one):

- | | | |
|--|--|---|
| <input type="checkbox"/> Opacity % | <input type="checkbox"/> Venting (gas/scf) | <input type="checkbox"/> Control Equipment Down |
| <input type="checkbox"/> Fugitive Emissions | <input type="checkbox"/> Emission Limit Exceeded | <input type="checkbox"/> Record Keeping Failure |
| <input type="checkbox"/> Marine Vessel Opacity | <input type="checkbox"/> Failure to monitor/report | <input type="checkbox"/> Flaring |
| <input type="checkbox"/> Other: | | |

(f) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable? ☐ YES ☐ NO
Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐ YES ☐ NO

Certify Report (go to end of form)

Section 2. Permit Deviations

(a) Permit Deviation Type (check one only) (check boxes correspond with sections in permit)

- ☐ Emission Unit Specific
☐ General Source Test/Monitoring Requirements
☐ Recordkeeping/Reporting/Compliance Certification
☐ Standard Conditions Not Included in Permit
☐ Generally Applicable Requirements
☐ Reporting/Monitoring for Diesel Engines
☐ Insignificant Emission Unit
☐ Stationary Source-Wide
☐ Other Section: (title of section and section # of your permit)

(b) Emission unit(s) Involved:

Identify the emission unit involved in the event, using the same identification number and name as in the permit. List the corresponding Permit condition and the deviation.

| <u>EU ID</u> | <u>Emission Unit Name</u> | <u>Permit Condition /Potential Deviation</u> |
|--------------|---------------------------|--|
| | | |

(c) Description of Potential Deviation: Describe briefly, what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) Corrective Actions: Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

NOTE: *This document must be certified in accordance with 18 AAC 50.345(j)*

To submit this report:

1. Fax this form to: 907-451-2187

Or

2. Email to: DEC.AQ.Airreports@alaska.gov

if faxed or emailed,

Or

3. Mail to: ADEC
Air Permits Program
610 University Avenue
Fairbanks, AK 99709-3643

Or

4. Phone notifications: 907-451-5173

Phone notifications require written follow up report.

Or

5. Submission of information contained in this report can be made electronically at the following website:

<http://dec.alaska.gov/Applications/Air/airtoolsweb/Home/Index>

If submitted online, report must be submitted by an authorized E-Signer for the stationary source.