

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL MINOR GENERAL PERMIT**

MINOR GENERAL PERMIT 9 FOR ROCK CRUSHERS

Permit No. AQ _____ MG901

Final – April 8, 2009

This minor general permit is to be used for construction, operation, or relocation of the rock crusher described below, which has a rated capacity of at least five tons per hour (as described in 18 AAC 50.502(b)(3)), that is also classified as or part of a minor stationary source and is not a Title V stationary source. This minor general permit also satisfies 18 AAC 50.502(c) for rock crushers that include diesel engine(s) with a cumulative capacity of 1,100 hp or less. This minor general permit satisfies the Permittee's obligation to obtain a permit under AS 46.14.120(g).

Permittee: _____

Plant name: _____

Listed Emission Units:

This minor general permit does not expire and is valid as long as the stationary source remains a minor source with respect to Title V permitting; until the Permittee requests the permit be rescinded; or until the Department terminates, modifies, reopens, or revokes and reissues the permit.



John F. Kuterbach, Manager
Air Permits Program

Table of Contents

Section 1: Qualifying Criteria	1
<i>Permitted Emission Units</i>	<i>1</i>
<i>Permit Duration.....</i>	<i>1</i>
<i>Change of Ownership</i>	<i>2</i>
Section 2: Compliance with State Emission Standards.....	3
<i>Visible Emissions Standard Requirements</i>	<i>3</i>
<i>Particulate Matter Standard Requirements</i>	<i>8</i>
<i>Sulfur Compound Emissions Standard Requirements</i>	<i>9</i>
<i>Ambient Air Quality Protection.....</i>	<i>11</i>
Section 3: Stationary Source Wide Requirements.....	12
Section 4: General Conditions.....	13
Section 5: General Source Testing and Monitoring Requirements	17
Section 6: General Recordkeeping and Reporting	19
Section 7: Terms to Make Permit Enforceable.....	23
Section 8: Visible Emissions Form.....	24
Section 9: Material Balance Calculation	26
Section 10: ADEC Notification Form	27
Section 11: Application Addendum (Location Change)	31
Section 12: Rock Crusher Emission Calculation Guide.....	33
Section 13: Visibility and Particulate Matter Charts.....	37
<i>Rock Crusher Visibility Monitoring Chart.....</i>	<i>37</i>
<i>Diesel Engine Visibility and Particulate Monitoring Flow Chart</i>	<i>38</i>
Section 14: Fugitive Emission Inspection Form.....	39

Section 1: Qualifying Criteria

The stationary source¹ authorized to operate under this minor general permit are commonly referred as *nonmetallic mineral rock crushers* (Rock Crushers²). The operations of Rock Crushers are described under Standard Industrial Classification codes 1442, 1446, and 3241. These operations include portland cement plants and the production of asphalt concrete for the manufacturing of paving products. Alaska law requires operators of rock crushers to obtain a minor permit under 18 AAC 50.502(b)(3) if the rock crusher has a rated capacity of at least five tons per hour.

The only requirements under this minor general permit for nonroad engines, as defined in 40 C.F.R. 89.2, are those in condition 42.

Exclusions

The stationary source is excluded from using this minor general permit if the following applies. However, if there is a general permit for the activities listed below, the stationary source may operate under both permits.

1. The non-metallic mineral processing plant has **emission points with mechanically induced air flow**, such as a fan forcing emissions to a stack or control device.
2. The stationary source contains open burning.
3. The stationary source has the potential to emit more than 100 tons per year of a regulated air pollutant (i.e. is subject to Title V permitting requirements).

Permitted Emission Units

This permit authorizes the Permittee to operate any emission unit identified in the permit application submitted for this minor general permit. The emission units need not be in the same immediate location. The operator must comply with the applicable requirements at the location where the emission units operate.

Permit Duration

This permit does not expire. The authority to operate remains in effect until either the Permittee requests their authority be rescinded or until the Alaska Department of Environmental Conservation (Department) terminates the authority for cause under 18 AAC 50.345(f).

¹ *Stationary Source* means any building, structure, facility or installation that emits or may emit any regulated air pollutant or any pollutant listed under section 112(b) of the Act (40 C.F.R. 70.2).

² *Crusher* means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor as defined in 40 C.F.R. 60.671.

MG9 – Rock Crusher Minor General Permit

Change of Ownership

If the ownership of the Rock Crusher is changed, both the new and previous owners must complete a transfer of ownership form and receive authorization to operate from the Department before the plant is operated by the new owner. The transfer of ownership form is available from ADEC Air Permits Program staff or on the Department's web site; the website address at the time of issuance of this permit is <http://www.dec.state.ak.us/air/ap/applic.htm>

Contact information for Air Permits Program staff may be found on the Department's website. The website address at the time of issuance of this permit is:
<http://www.dec.state.ak.us/air/ap/aqmstaff.htm>.

Section 2: Compliance with State Emission Standards

Visible Emissions Standard Requirements

1. **Visible Emissions Standard.** The Permittee shall not cause or allow visible emissions from a Rock Crusher and all diesel engines authorized by this permit, excluding condensed water vapor, to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.
 - 1.1 For rock crushers, monitor, record, and report in accordance with conditions 2, 3, and 4.
 - 1.2 For diesel engines, monitor, record, and report in accordance with conditions 5, 6, and 7.
2. **Rock Crusher Visible Emissions Monitoring.** The Permittee shall inspect each emission point capable of producing fugitive emissions and observe each emission point producing fugitive emissions for visible emissions in accordance with 40 C.F.R. 60, Appendix A, Method 9 for a minimum of 18 consecutive minutes.
 - 2.1 Emission points capable of producing fugitive emissions include (but are not limited to) the descriptions in condition 24.
 - 2.2 The Permittee shall perform visible emissions observations:
 - a. when the Rock Crusher is operating at loads typical of normal operations;
 - b. within two days of startup at a new location;
 - c. at least once during a 14-day operating period at the same location; and
 - d. within 24 hours following the startup of the Rock Crusher after a shut down period of more than five days.
3. **Rock Crusher Visible Emissions Recordkeeping.** The Permittee shall keep records as follows:
 - 3.1 the observer shall
 - a. List and record the emission points capable of producing fugitive emissions that the observer inspected.
 - b. Record
 - (i) the name of the stationary source, emission unit and location, stationary source type, observer's name and affiliation and the date on the Visible Emissions Form in Section 8;
 - (ii) the production rate or operating rate at the time of the Method 9 observation;

- (iii) the time, estimated distance to the emissions 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) on the sheet at the time opacity observations are initiated and completed;
 - (iv) 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;
 - (v) opacity observations to the nearest five percent at 15-second intervals on the Visible Emission Form Section 8, and
 - (vi) 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.
- c. 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.
 - d. Calculate and record the highest 6-consecutive-minute averages observed.
- 4. Rock Crusher Visible Emissions Reporting.** The Permittee shall report visible emissions as follows:
- 4.1 Include in each operating report required in condition 41:
 - a. the emission points capable of producing fugitive emissions that the observer inspected;
 - b. copies of the observation results (i.e. opacity observations) for each emission unit except for the observations the Permittee has already supplied to the Department;
 - c. a summary to include:
 - (i) number of days observations were made;
 - (ii) highest six-minute average observed; and
 - (iii) dates when one or more observed six-minute averages were greater than 20 percent; and
 - d. a summary of any monitoring or record keeping required under condition 2 that was not done.
 - 4.2 Report under condition 40 for excess emissions and permit deviation reports:

MG9 – Rock Crusher Minor General Permit

- a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and
 - b. if any monitoring under condition 2 was not performed when required, report within three days of the date of discovery.
5. **Diesel Engine Visible Emissions Monitoring.** The Permittee shall observe the exhaust of any diesel engines subject to condition 1 for visible emissions using either the Method 9 Plan under condition 5.1 or the Smoke/No-Smoke Plan under condition 5.2. The Permittee may change visible-emission plans for an emission unit at any time unless prohibited from doing so by condition 5.3.
- 5.1 **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. Except as provided in condition 5.4, for diesel engines, observe exhaust for 18 minutes within 15 days of beginning production in each operating season or within 3 operating days after changing from the Smoke/No Smoke Plan of condition 5.2, 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 the engine operates.
- 5.2 **Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.
- a. Initial Monitoring Frequency. Observe the exhaust during each calendar day that an emission unit operates.
 - b. Reduced Monitoring Frequency. After the emission unit has been observed on 30 consecutive operating days, if the emission unit operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that an emission unit operates.
 - c. Smoke Observed. If smoke is observed, either begin the Method 9 Plan of condition 5.1 or perform the corrective action required under condition 5.3.
- 5.3 **Corrective Actions Based on Smoke/No Smoke Observations.** If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of condition 5.2, then the Permittee shall either follow the Method 9 plan of condition 5.1 or
- a. initiate actions to eliminate smoke from the emission unit 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 5.3a,
 - (i) take Smoke/No Smoke observations in accordance with condition 5.2
 - (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 5.2b; or
 - (ii) if the actions taken under condition 5.3a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of condition 5.3c(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 5.2a.
- 5.4 In the case of renewal permits, the Permittee shall have the option to continue an established monitoring frequency rather than re-starting the cycle of monitoring from the beginning as in Condition 5.1a. The Permittee shall make note of this option in the first operating report required by Condition 41 submitted under the renewed permit.
- 6. Diesel Engine Visible Emissions Recordkeeping.** The Permittee shall keep records as follows:
- 6.1 If using the Method 9 Plan of condition 5.1
- a. the observer shall record
 - (i) the name of the stationary source, emission unit and location, stationary source type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet in Section 8;
 - (ii) the time, estimated distance to the emissions 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) 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 Form in Section 8, 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;

MG9 – Rock Crusher Minor General Permit

- 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 18-consecutive-minute average observed.
- 6.2 If using the Smoke/No Smoke Plan of condition 5.2, 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. the ID of the emission unit observed;
 - c. whether visible emissions are present or absent in the exhaust;
 - d. a description of the background to the exhaust during the observation;
 - e. if the emission unit starts operation on the day of the observation, the startup time of the emission unit;
 - f. name and title of the person making the observation; and
 - g. operating rate (load or fuel consumption rate).
7. **Diesel Engine Visible Emissions Reporting.** The Permittee shall report visible emissions as follows:
- 7.1 include in each operating report required in condition 41:
- a. which visible-emissions plan of condition 2 was used for each emission unit; if more than one plan was used, give the time periods covered by each plan;
 - b. for each emission unit under the Method 9 Plan,
 - (i) copies of the observation results (i.e. opacity observations) for each emission unit 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;

MG9 – Rock Crusher Minor General Permit

- c. for each emission unit 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 5 and 5.3c(ii) that was not done.

7.2 Report under condition 40:

- a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and
- b. if any monitoring under condition 5 was not performed when required, report within three days of the date the monitoring was required.

Particulate Matter Standard Requirements

8. **Particulate Matter (PM) Standard.** The Permittee shall not cause or allow PM emitted from a Rock Crusher and all diesel engines authorized by this permit to exceed 0.05 grains per cubic foot of exhaust corrected to standard conditions and averaged over three hours.

- 8.1 For diesel engines, monitor, record, and report in accordance with conditions 9, 10, and 11.

9. **Diesel Engine PM Monitoring.** The Permittee shall conduct source tests on a diesel engine authorized by this permit to determine the concentration of PM in the exhaust in accordance with this condition 9.

- 9.1 Within six calendar months that the engine operates after exceeding the criteria of conditions 9.2a or 9.2b, 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 conditions 9.2a or 9.2b; to show that emissions are below those criteria, observe emissions as described in condition 5.1 under load conditions comparable to those when the criteria were exceeded.

- 9.2 Conduct the test according to condition 9.1 if

- a. 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or
- b. for a diesel engine 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.

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

9.4 The automatic PM source test requirement in conditions 9.1 and 9.2 is waived for an engine if a PM source test on that unit has shown compliance with the PM standard within the last five years.

10. Diesel Engine PM Recordkeeping. Within 180 calendar days after a letter of authorization is issued for this minor general permit, the Permittee shall record the exhaust stack of diameter(s) of each diesel engine authorized under this minor general permit. Report the stack diameter(s) in the next operating report required by condition 41

11. Diesel Engine PM Reporting. The Permittee shall report as follows:

11.1 report under condition 40

- a. the results of any PM source test that exceeds the PM emissions limit; or
- b. if one of the criteria of condition 9.2 was exceeded and the Permittee did not comply with either condition 9.1 a or 9.1b, this must be reported by the day following the day compliance with condition 9.1 was required;

11.2 report observations in excess of the threshold of condition 9.2b within 30 days of the end of the month in which the observations occur;

11.3 in each operating report required by condition 41, include

- a. the dates, diesel engine ID(s), and results when an observed 18-minute average was greater than an applicable threshold in condition 9.2;
- b. a summary of the results of any PM testing under condition 9; and
- c. copies of any visible emissions observation results (opacity observations) greater than the thresholds of condition 9.2, if they were not already submitted.

Sulfur Compound Emissions Standard Requirements

12. 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 a diesel engine (or any industrial processes or other fuel burning equipment) to exceed 500 parts per million (ppm) averaged over three hours.

13. Sulfur Compound Emissions – Monitoring and Record Keeping

13.1 The Permittee shall do one of the following for each shipment of fuel:

- a. if the fuel grade requires a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount; or
- b. if the fuel grade does not require a sulfur content less than 0.5 percent by weight, keep receipts that specify fuel grade and amount and
 - (i) test the fuel for sulfur content; or

- (ii) obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results must include a statement signed by the supplier or refinery of what fuel they represent.
- 13.2 Fuel testing under condition 13.1 must follow an appropriate method listed in 18 AAC 50.035 or another method approved in writing by the Department.
- 13.3 If a load of fuel contains greater than 0.75 weight percent sulfur, the Permittee shall calculate SO₂ emissions in parts per million (ppm) using either the SO₂ material balance calculation in Section 9 or Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).
- 14. Sulfur Compound Emissions – Reporting.** The Permittee shall report in accordance with this condition 14.
 - 14.1 If SO₂ emissions calculated under condition 13.3 exceed 500 ppm, the Permittee shall report under condition 40. When reporting under this condition 14.1, include the calculation under condition 13.3.
 - 14.2 The Permittee shall include in the report required by condition 41:
 - a. a list of the fuel grades received at the stationary source during the reporting period;
 - b. for any grade with a maximum fuel sulfur greater than 0.5 percent by weight, the fuel sulfur of each shipment; and
 - c. for fuel with a sulfur content greater than 0.75 percent by weight, the calculated SO₂ emissions in ppm.
- 15. Sulfur Compound Emissions – North Slope – Monitoring, Record Keeping, and Reporting.** For liquid fuel from a North Slope topping plant, the Permittee shall obtain from the topping plant the results of a monthly fuel analysis.
 - 15.1 The Permittee shall include in the report required by condition 41, a list of the sulfur content measured for each month covered by the report.
 - 15.2 The Permittee shall report under condition 40, if the sulfur content for any month exceeds 0.75 weight percent.
- 16. Sulfur Monitoring for sources using fuel gas**
 - 16.1 The Permittee shall **either**:
 - a. obtain a semiannual statement from the fuel supplier of the fuel gas H₂S concentration in ppm; **or**
 - b. analyze a representative sample of the fuel semiannually to determine the sulfur content using 40 C.F.R. 60, Appendix A, Method 15.
 - 16.2 Recordkeeping - Keep records of the semiannual statement from the fuel supplier or the sulfur content analysis required under condition 16.1.

MG9 – Rock Crusher Minor General Permit

16.3 Reporting –

- a. Report as excess emissions, in accordance with condition 40, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 12.
- b. Include copies of the records required by condition 16.2 with the stationary source operating report required by condition 41.

Ambient Air Quality Protection

17. General Requirements. In order to protect the State ambient air quality standards and increments listed in 18 AAC 50.010 and 18 AAC 50.020, the Permittee shall

- 17.1 not operate the Rock Crusher or a diesel engine used to provide electrical or mechanical power³ to the Rock Crusher, within 400 feet of the nearest residential structure;⁴
- 17.2 not operate for more than *two* construction seasons a Rock Crusher, or a diesel engine used to provide electrical or mechanical power to the Rock Crusher, that is located within 1,000 feet of the nearest residence or other occupied structure; and
- 17.3 give adequate consideration to siting issues as described in the note below when operating or changing locations of a crusher permitted to operate under this permit.

NOTE: *The above setback distances are minimum requirements. Permittees should give adequate consideration to local siting issues which may exist within a given area. Poor siting can lead to public complaints regarding dust impacts and/or impacts from other air pollutants. The Department does investigate these types of public complaints. These investigations could result in:*

1. *formal enforcement with punitive damages;*
2. *a formal request under 18 AAC 50.201 that the Permittee demonstrate, by air quality dispersion modeling or other means, that the air quality impacts are not violating State air quality standards or increments; or creating a public nuisance (under 18 AAC 50.110);*
3. *the requirement to reduce emissions or implement another control strategy to reduce the ambient impact of those emissions as necessary to ensure that the concentration of air pollutants does not exceed the State air quality standards or increments; or the concerns listed in 18 AAC 50.110;*
4. *a requirement to install and operate air quality monitoring equipment; or*
5. *the requirement to obtain a site specific permit with which would contain requirements tailored to that exact operation.*

³ This does not include wheeled or tracked equipment powered by a diesel engine such as front end loaders.

⁴ For purposes of complying with Conditions 17.1 and 17.2, all distances shall be measured from the air emission release point, or material handling activity, that is located nearest to a residential/occupied structure to the nearest face of the residence/structure.

Section 3: Stationary Source Wide Requirements

18. Pollution Control Equipment Breakdown Reporting

18.1 Notify the Department within two days of a pollution-control equipment breakdown as a permit deviation under condition 40. Provide a schedule for repair of the pollution control equipment and do not operate the plant after the breakdown until repairs have been completed.

18.2 In the operating report required by condition 41, provide a summary of any pollution control equipment breakdowns. The summary shall include:

- a. the equipment involved;
- b. the date of the breakdown; and
- c. the date the equipment was returned to service.

19. Relocation and Reporting of Site Selection. The Permittee shall provide notice to the Department at least 10 days prior to installing or relocating the Rock Crusher by using the Application Addendum (Location Change) in Section 11.

Section 4: General Conditions

- 20. Administration Fees.** The Department charges Permit Administration fees for the issuing or renewing the Minor General Permit. Permit compliance fees are charged for the review of the operating reports. The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-405.
- 21. 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(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. The quantity for which fees will be assessed is the lesser of
- 21.1 the stationary source's assessable potential to emit measured in tons per year; or
 - 21.2 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 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;
 - d. calculations based upon the Department's Rock Crusher Emission Fee Calculation Guide in Section 12; or
 - e. other methods and calculations approved by the Department.
- 22. Assessable Emissions Estimates.** Emission fees will be assessed as follows:
- 22.1 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, per the Emission Reporting and Emission Fee Estimate form in Attachment 1 of the Technical Analysis Report (TAR); 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
 - 22.2 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 out in condition 21.1.
- 23. Good Air Pollution Control Practice.** For all emission units authorized by this minor general permit, the Permittee shall:
- 23.1 perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

23.2 keep records of any maintenance that would have a significant effect on emissions (the records may be kept in electronic format); and

23.3 keep a copy of either the manufacturer's or the operator's maintenance procedures.

24. Reasonable Precautions to Prevent Fugitive Dust. A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent the release of airborne PM and fugitive dust from aggregate piles, conveyors and elevators, loading locations, the rotary drum, screens, baghouse ash discharge, vehicle traffic within the stationary source boundaries and other sources of fugitive dust into the ambient air.

24.1 Reasonable precautions for Rock Crushers to prevent PM from becoming airborne include as necessary:

- a. installation and use of hoods;
- b. fans and dust collectors to enclose and vent dusty materials;
- c. other covers and enclosures to prevent generation or release of fugitive dust;
- d. cleanup of loose material on work surfaces;
- e. minimizing drop distances on conveyor systems and lowering loader buckets to be in contact with the surface of the soil or ground before dumping;
- f. application of water or suitable chemicals to road surfaces to prevent the generation of fugitive dust;
- g. gratings at the exit of the Stationary source to prevent tracking of dirt or mud onto public roads; and
- h. for a Rock Crusher located near a business, residence or other occupied structure, if the wind is blowing toward the structure and emissions from an activity would result in a violation of condition 25, stopping the activity that would cause the violation while the wind blows in that direction.

24.2 Dust Control Plans

- a. If a location listed in an application or in an application addendum (see Section 11) is within 2,000 feet of the nearest inhabited off-site structure, the applicant or Permittee must attach a fugitive dust control plan as part of that application or addendum. The Permittee must also submit a fugitive dust control plan, or revision to the plan if requested by the Department. The operator must comply with a dust control plan approved by the Department.

- b. The plan must be specific to any location named in a permit application or application addendum, and must specify the measures that will be taken and under what circumstances the Permittee will use them. If necessary, the plan will identify the frequency with which the measures will be applied. A plan does not fulfill this requirement if it simply mentions the measures that can be taken to control fugitive dust for a particular emission unit.
 - c. The plan must specify the frequency of fugitive emission inspections for each emission point, and must use the form in Section 14 to record the results. The Permittee shall record the following information in a written log for each observation and submit copies of the recorded information upon request of the department.
- 24.3 The Permittee shall report under condition 40 for permit deviation reports if the Permittee deviates from the dust control plan and explain:
- a. in what way the Permittee deviated from the plan;
 - b. the cause of the deviation; and
 - c. the reason for the deviation.
- 24.4 The Permittee shall keep records of
- a. complaints received by the Permittee and complaints received by the department and conveyed to the Permittee; and
 - b. any additional precautions that are taken
 - (i) to address complaints described in condition 24.4a or to address the results of department inspections that found potential problems; and
 - (ii) to prevent future dust problems.
- 24.5 The Permittee shall report according to condition 26.
25. **Air Pollution Prohibited.** No person may permit any emission 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.
26. **Monitoring, Record Keeping, and Reporting for Air Pollution Prohibited**
- 26.1 If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition 40.
- 26.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the Rock Crusher, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of condition 25.
- 26.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

MG9 – Rock Crusher Minor General Permit

- a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of condition 25; or
- b. the Department notifies the Permittee that it has found a violation of condition 25.

26.4 The Permittee shall keep records of

- a. the date, 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 25; and
- d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.

26.5 With each operating report under condition 41, 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.

26.6 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.

Section 5: General Source Testing and Monitoring Requirements

27. **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.
28. **Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing
 - 28.1 at a point or points that characterize the actual discharge into the ambient air; and
 - 28.2 at the maximum rated burning or operating capacity of the emission unit or another rate determined by the Department to characterize the actual discharge into the ambient air.
29. **Reference Test Methods.** The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:
 - 29.1 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.
 - 29.2 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(b) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 61.
 - 29.3 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(c) must be conducted in accordance with the source test methods and procedures specified in 40 C.F.R. 63.
 - 29.4 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9 and may use the form in Section 8 to record data.
 - 29.5 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.
 - 29.6 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.
 - 29.7 Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63 Appendix A, Method 301.

30. **Excess Air Requirements.** To determine compliance with this permit, standard exhaust gas volumes must include only the volume of gases formed from the theoretical combustion of the fuel, plus the excess air volume normal for the specific emission unit type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).
31. **Test Exemption.** The Permittee is not required to comply with conditions 33, 34, and 35 when the exhaust is observed for visible emissions by Method 9 Plan (conditions 2 and 5.1) or Smoke/No Smoke Plan (condition 5.2 for *Diesel Engines Only*).
32. **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.
33. **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 emission unit will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under condition 27 and 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.
34. **Test Notification.** At least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.
35. **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 in the manner set out in condition 39. 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 and Reporting

- 36. Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including
- 36.1 copies of all reports and certifications submitted pursuant to this section of the permit; and
 - 36.2 records of all monitoring required by this permit, and information about the monitoring including:
 - 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.
- 37. 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 and 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.
- 38. Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall send reports, compliance certifications, and other documents required by this permit to ADEC, Air Permits Program, 610 University Avenue, 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 37.

39. Certification. The Permittee shall certify all reports, compliance certifications, 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 emission 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. The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if

39.1 a certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and

39.2 the person providing the electronic signature has made an agreement, with the certifying authority described in condition 39.1, that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature.

40. Excess Emissions and Permit Deviation Reports.

40.1 Except as provided in condition 25, 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 non-routine repair that causes emissions in excess of a technology based emission standard;

c. report all other excess emissions and permit deviations

(i) within 30 days of the end of the month in which the emissions or deviation occurs or is discovered, except as provided in conditions 40.1c(ii) and 40.1c(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 condition 40.1c(i); and

(iii) for failure to monitor, as required in other applicable conditions of this permit.

- 40.2 When reporting excess emissions, 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/deca/air/airtoolsweb/>, or, if the Permittee prefers, the form contained in Section 10. The Permittee must provide all information called for by the form that is used.
- 40.3 The Permittee must report using either the Department's on-line form, or if the Permittee prefers, the form contained in Section 10 of this permit. The Permittee must provide all information called for by the form that is used.
- 40.4 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.
- 41. Operating Reports.** The Permittee shall submit an original and two copies of an operating report by April 30 for the period October 1 (of the previous year) to March 31 and by October 30 for the period April 1 to September 30.
- 41.1 The operating report must include all information required to be in operating reports by other conditions of this permit. 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 Departmental submission requirements.
- 41.2 If excess emissions or permit deviations that occurred during the reporting period are not reported under condition 41.1, either
- a. the Permittee shall identify
 - (i) the date of the deviation;
 - (ii) the equipment involved;
 - (iii) the permit condition affected;
 - (iv) a description of the excess emissions or permit deviation; and
 - (v) any corrective action or preventive measures taken and the date or dates of such actions; or
 - b. when excess emissions or permit deviations have already been reported under condition 40, the Permittee may cite the date or dates of those reports.
- 41.3 The operating report must include a listing of emissions monitored (e.g., conditions 2, 5, 9, 13, and 26) which trigger additional testing or monitoring, whether or not the emissions monitored exceed an emission standard. The Permittee shall include in the report
- a. the date of the emissions;
 - b. the equipment involved;

MG9 – Rock Crusher Minor General Permit

- c. the permit condition affected; and
 - d. the monitoring result which triggered the additional monitoring.
- 41.4 Transition from expired to renewed permit. For the first period of this renewed operating permit, also provide the previous permit's operating report elements covering that partial period immediately preceding the effective date of this renewed permit.
42. **Nonroad Engines.** The Permittee shall keep a log of following information for each engine that meets the definition of nonroad engine under 40 CFR 89.2:
- 42.1 date and location each time the engine is relocated; and
 - 42.2 make, model, serial number and capacity of the engine.
 - 42.3 The Permittee shall make these records available to the Department upon request.

Section 7: Terms to Make Permit Enforceable

43. Compliance with permit terms and conditions is considered to be compliance with those requirements that are
 - 43.1 included and specifically identified in the permit; or
 - 43.2 determined in writing in the permit to be inapplicable.
44. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14.120(c), 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
 - 44.1 an enforcement action; or
 - 44.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.
45. 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.
46. 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.
47. 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.
48. The permit does not convey any property rights of any sort, nor any exclusive privilege.
49. 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
 - 49.1 enter upon the premises where a emission unit subject to the permit is located or where records required by the permit are kept;
 - 49.2 have access to and copy any records required by the permit;
 - 49.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and
 - 49.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

Section 8: Visible Emissions Form

Visible Emissions Field Data Sheet

Certified Observer: _____

Company &
Stationary
Source: _____

Location: _____

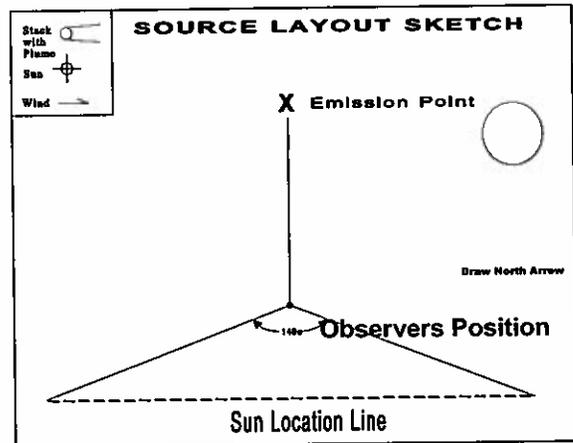
Test No.: _____ Date: _____

Emission Unit: _____

Production Rate/Operating
Rate: _____

Unit Operating Hours: _____

Hrs. of observation: _____



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

Section 9: Material Balance Calculation

If the sulfur content of a fuel shipment is greater than 0.75% by weight, calculate the three-hour exhaust concentration of SO₂ using the following equations:

$$\begin{aligned}
 \text{A.} &= 31,200 \times [\text{wt}\%S_{\text{fuel}}] = 31,200 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{B.} &= 0.148 \times [\text{wt}\%S_{\text{fuel}}] = 0.148 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{C.} &= 0.396 \times [\text{wt}\%C_{\text{fuel}}] = 0.396 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{D.} &= 0.933 \times [\text{wt}\%H_{\text{fuel}}] = 0.933 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{E.} &= B + C + D = \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{F.} &= 21 - [\text{vol}\%_{\text{dry}}O_{2, \text{exhaust}}] = 21 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{G.} &= [\text{vol}\%_{\text{dry}}O_{2, \text{exhaust}}] \div F = \underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{H.} &= 1 + G = 1 + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{I.} &= E \times H = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \\
 \text{SO}_2 \text{ concentration} &= A \div I = \underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ ppm}
 \end{aligned}$$

The wt%*S_{fuel}*, wt%*C_{fuel}*, and wt%*H_{fuel}* are equal to the weight percents of sulfur, carbon, and hydrogen in the fuel. These percentages should total 100%.

The fuel weight percent (wt%) of sulfur is obtained pursuant to condition 13.1. The fuel weight percents of carbon and hydrogen are obtained from the fuel refiner.

The volume percent of oxygen in the exhaust (vol%*dry*O_{2, exhaust}) is obtained from oxygen meters, manufacturer's data, or from the most recent ORSAT analysis at the same engine load used in the calculation.

Enter all of the data in percentages without dividing the percentages by 100. For example, if wt%*S_{fuel}* = 1.0%, then enter 1.0 into the equations not 0.01 and if vol%*dry*O_{2, exhaust} = 3.00%, then enter 3.00, not 0.03.

Section 10: ADEC Notification Form⁵

Stationary Source Name _____

Air Quality Permit Number _____

Company Name _____

When did you discover the Excess Emissions/Permit Deviation?

Date: _____ / _____ / _____ Time: _____ : _____

When did the event/deviation occur?

Begin Date: _____ / _____ / _____ Time: _____ : _____ (please use 24hr clock)

End Date: _____ / _____ / _____ Time: _____ : _____ (please use 24hr 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 Condition - Complete Section 2 and Certify
- Deviations from COBC, CO, or Settlement Agreement - Complete Section 2 and Certify

Section 1. Excess Emissions

(a) Was the exceedance: Intermittent or Intermittent

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

- Start Up /Shut Down
- Natural Cause (weather/earthquake/flood)
- Control Equipment Failure
- Scheduled Maintenance/Equipment Adjustment
- 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) Emissions Units Involved:

Identify the emission unit 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.

Unit ID	Emission Unit Name	Permit Condition Exceeded/Limit/Potential Exceedance

⁵ Revised as of August 20, 2008

MG9 – Rock Crusher Minor General Permit

(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"/> 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)

- Source Specific
- Failure to monitor/report
- General Source Test/Monitoring Requirements
- Recordkeeping/Reporting/Compliance Certification
- Standard Conditions Not Included in Permit
- Generally Applicable Requirements
- Reporting/Monitoring for Diesel Engines
- Insignificant Source
- Facility Wide
- Other Section: _____ (title of section and section # of your permit)

(b) Emission Units Involved:

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

Unit ID	Emission Unit Name	Permit Condition /Potential Deviation

(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. E-mail to: DEC.AQ.airreports@alaska.gov
if faxed or e-mailed,

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:

<https://myalaska.state.ak.us/deca/air/airtoolsweb/>

if submitted online, report must be submitted by an authorized E-Signer for the Stationary Source.

Section 11: Application Addendum (Location Change)

Submit the information specified below to the Department's Air Permits Program, Compliance Technician, 610 University Avenue, Fairbanks, Alaska 99709-3643 *ten* days before moving of the plant to any new location, and the exact date before startup by telephone, fax, e-mail or letter.

Name of Firm: _____ Permit Number _____
Make and Model of the Equipment/ Stationary source to be relocated _____
_____ Attach a complete list of equipment to be operated at the new location.

Contact Person: _____ Telephone: _____

New rock crusher location (Street address, Milepost number etc. Include site maps):

Latitude _____ Longitude _____ or

UTM Coordinates: Zone _____ Northing _____ Easting _____

Datum _____

Estimated start-up and shut-down dates: _____

Distance from Plant boundary to nearest inhabited structure _____ feet.

Nearest inhabited structures are on (check one) ___ flat or ___ elevated terrain

If this distance is within 2,000 feet, include with this addendum a dust control plan that is specific to this location and is adequate to prevent violations of condition 25, Air Pollution Prohibited.

Attach approval documents from Borough where plant is to be located.

Comments: _____

Alaska Coastal Management Plan (Check One):

- This plant will not be located within a Coastal District as identified in the Alaska Coastal Management Plan.
- This plant will be located within a Coastal District and will comply with the enforceable policies for the district it is located in.

Attach all applicable policies for the coastal district to this report.

MG9 – Rock Crusher Minor General Permit

I hereby certify that the information contained in this notification to the best of my knowledge and belief, is true, complete, and accurate. I have taken the information in condition 17 into account in the site selection for this plant relocation.

Signature: _____ Printed Name: _____

Title: _____ Telephone: _____

Section 12: Rock Crusher Emission Calculation Guide

The Permittee is required to pay to the Department an annual emission fee based on the stationary source's assessable emissions for each year it is subject to this permit. The emission fee is assessed per ton for each air pollutant for which projected emissions are 10 tons per year (tpy) or greater, except as limited in AS 46.14.250(e).

Emission fees are assessed from July 1st through the following June 30th for each year.

The quantity of emissions for which fees will be assessed is the lesser of the stationary source's potential to emit; or the projected annual rate of emissions, as that term is used in AS 46.14.250, if demonstrated by an enforceable test method described in 18 AAC 50.220, material balance calculations, emission factors from EPA's publication AP-42, *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition with Supplements A – E*, as amended through September 1999 adopted by reference in 18 AAC 50.035; or other methods and calculations approved by the Department.

Emissions for the Rock Crusher:

Calculate the actual emissions from the rock crusher for PM-10 in tons per year (tpy) using Equation 1 below.

Report the actual emissions in the Emission Reporting and Emission Fee Estimate form, provided in Attachment 1 of the Technical Analysis Report (TAR), in the column labeled "Rock Crusher."

Attach the calculations for all pollutants calculated to the Emission Reporting and Emission Fee Estimate form.

If the manufacturer has provided more accurate emission factors than the factors listed in this section, you may use those emission factors provided the Department approves the use of the factors and the methods used to perform the calculations. You may also use emission factors based upon the latest source test provided the source test has been approved by the Department. The calculations shall be recorded and kept on site for a minimum of five years. The calculations shall clearly reflect the emission factors used. If you are using emission factors based upon manufacturer's data, attach the manufacturer's data to the calculations.

Emissions for Diesel Engine Generators:

Calculate the actual emissions from the diesel engine generator/s for NO_x, CO, SO₂, PM-10, and VOC in tpy using either Equation 2 or Equation 3 below.

Report the actual emissions in the Emission Reporting and Emission Fee Estimate form, provided in Attachment 1 of the TAR in the column for the "Diesel Generator".

Attach the calculations for all pollutants calculated to the form contained in Emission Reporting and Emission Fee Estimate form.

If your facility operates more than one diesel engine, add the totals for all the diesel engines together before entering them in the appropriate column. If your facility does not use a diesel engine but uses highline electrical power, mark the blocks as Uses Highline Power.

MG9 – Rock Crusher Minor General Permit

If the manufacturer has provided more accurate emission factors than the factors listed in this section, you may use those emission factors provided the Department approves the use of the factors and the methods used to perform the calculations. You may also use emission factors based upon the latest source test provided the source test has been approved by the Department. The calculations shall be recorded and kept on site for a minimum of five years. The calculations shall clearly reflect the emission factors used. If you are using emission factors based upon manufacturer's data, attach the manufacturer's data to the calculations.

Assessable Emissions Fee Estimate:

Add the pollutant from each column (Rock Crusher and Diesel Generator) of the Emission Reporting and Emission Fee Estimate form together. If the total equals or exceeds 10 tpy, enter that amount in the column labeled "Assessable Emissions".

Submit the form to the Department no later than March 31st of each year.

Equation 1

$$\text{Emissions} = (\text{EF} \times (\text{Hours of operation} * \text{RC})) / \text{lbs per ton}$$

Where:

EF = pollutant emission factor in lb/ton of rock crushed processed

RC = rated capacity of Rock Crusher in tons per hour

Hours of operation = hours of operation of Rock Crusher

lbs per ton = 2,000

Emissions = (EF x (hrs * RC)) / 2,000 = tons per year

Emission Factors for Crushed Stone Processing (lb/ton of stone crushed)¹

	Primary and Secondary Crushing	Tertiary Crushing	Fines Crushing	Screening	Fines Screening	Conveyor Transfer Point	Aggregate Handling and Storage Piles ²
PM	None	0.0054	0.0390	0.025	0.30	0.0030	0.05
PM-10	None	0.0024	0.0150	0.0087	0.072	0.00110	0.05

1. Emission factor units are lb per ton of stone processed. The preceding emission factors were compiled from AP-42, 5th addition, Table 11.19.2 and Equation 1 of Section 13.2.4.

2. This emission factor conservatively assumed 10 mph wind speed and 0.25 percent moisture content.

MG9 – Rock Crusher Minor General Permit

Equation 2

$$\text{Emissions} = ((\text{EF} \times \text{Hp}) * \text{Hours of operation}) / \text{lbs per ton}$$

Where:

EF = emission factor

HP= horse power of unit

Hours of operation = hours of rock-crushing operations

lbs per ton = 2,000

$$((\text{EF} * \text{hp}) * \text{hrs}) / 2,000 = \text{tons per year}$$

Equation 3

$$\text{Emissions} = ((\text{EF} \times \text{MMBtu}) * \text{Hours of operation}) / \text{lbs per ton}$$

Where:

EF = emission factor

MMBtu = Manufacturer's rated capacity

Hours of operation = hours of rock-crushing operations

lbs per ton = 2,000

$$\text{Emissions} = ((\text{EF} \times \text{MMBtu}) * \text{hrs}) / 2,000 = \text{tons per year}$$

Emission Factors for Diesel Engines less than or equal to 600 hp

Pollutant	CO	NO _x	SO ₂	PM-10	VOC
Emission factor (lb/hp-hr) power output	6.68 E -03	0.031	2.05 E -03	2.20 E -03	2.47 E-05
Emission factor (lb/MMBtu) fuel input	0.95	4.41	0.29	0.31	0.35

The preceding emission factors were compiled from AP-42, 5th addition, Table 3.3-1

Emission Factors for Large Diesel Engines more than 600 hp Diesel Fuel, Uncontrolled Emissions

Pollutant	CO	NO _x	SO ₂ ⁶	PM-10	VOC
Emission factor (lb/hp-hr) power output	5.5 E-03	0.024	8.09 E-03S ₁	0.0007	7.05 E-04
Emission factor (lb/MMBtu) fuel input	0.85	3.2	1.01S ₁	0.1	0.09

The preceding emission factors were compiled from AP42, 5th addition, Table 3.4-1

⁶ Assumes that all sulfur in the fuel is converted to SO₂. S₁ = % sulfur in fuel oil. For example, if sulfur content is 1.5%, S = 1.5.

MG9 – Rock Crusher Minor General Permit

Emission Factors for Large Diesel Engines more than 600 hp Diesel Fuel, Controlled Emissions⁷

Pollutant	CO	NO _x	SO ₂ ⁸	PM-10	VOC
Emission factor (lb/hp-hr) power output	5.5 E-03	0.013	8.09 E-03S ₁	0.0007	7.05 E-04
Emission factor (lb/MMBtu) fuel input	0.85	1.9	1.01S ₁	0.1	0.09

The preceding emission factors were compiled from AP42, 5th addition, Table 3.4-1

⁷ References 8-26. Controlled NO_x is by ignition timing retard.

⁸ Assumes that all sulfur in the fuel is converted to SO₂. S₁ = % sulfur in fuel oil; S₂ = % sulfur in natural gas. For example, if sulfur content is 1.5%, S = 1.5.

Section 13: Visibility and Particulate Matter Charts

Rock Crusher Visibility Monitoring Chart

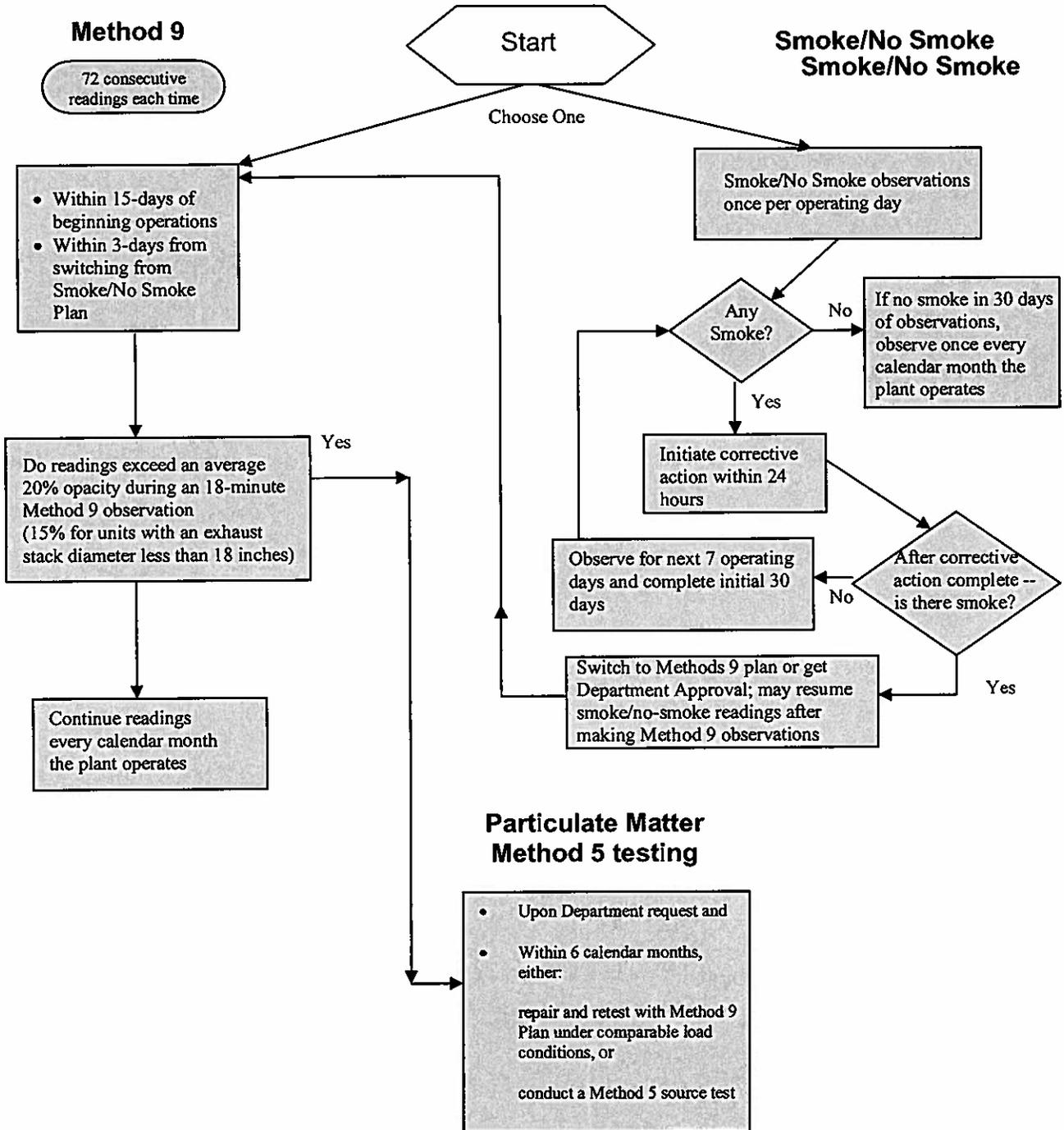
Visible Emissions (Method 9)

Within two days of startup at a new location
Once every 30-day operating period at the same location
Within 24-hours of startup after a shutdown period of more than 5 days

Conduct Method 9 observations at 15-second intervals for a minimum of 18-consecutive minutes.
Conduct VE readings at loads typical of normal operations

Record the production rate at the time of the Method 9 observation

Diesel Engine Visibility and Particulate Monitoring Flow Chart



Section 14: Fugitive Emission Inspection Form

FUGITIVE OR SMOKE EMISSION INSPECTION OUTDOOR LOCATION			
Company _____	Observer _____		
Location _____	Affiliation _____		
Company Rep. _____	Date _____		
Sky Conditions _____	Wind Direction _____		
Precipitation _____	Wind Speed _____		
Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.			
Observations	Clock Time	Observation period duration, min:sec	Accumulated emission time, min:sec
Begin Observation			
End Observation			

**Alaska Department of Environmental Conservation
Air Permits Program**

TECHNICAL ANALYSIS REPORT

for

**Air Quality Control
Minor General Permit 9**

for

Rock Crushers

**Preparer: Matt Wilkinson
Supervisor: Sally A. Ryan, P.E.**

INTRODUCTION

This permit is intended for rock crushers that are required to have a permit because they are classified as needing a minor permit under 18 AAC 50.502(b)(3) (i.e. they have a rated capacity of at least five tons per hour).

Rock crushers sometimes break down the oversize material to be fed into the process for asphalt plants, or to recycle asphalt pavement. An applicant must apply for a Minor General Permit 3 or a General Permit 3 for Asphalt Plants to operate the asphalt plant.

Note that the Department deleted the Coastal Management provisions in condition 23 of the prior GP9 because it is solely ACMP related and cites Aleutians West CRSA enforceable policies that are no longer in effect. On January 22 through February 2, 2009, the Department conducted a 10-day ACMP project scope request to solicit applicable enforceable policies from all Coastal District Coordinators in Alaska with enforceable policies for ACMP Consistency Review.

On February 2, 2009, the Department received a response from one coastal district: the Aleutians West Coastal District. The permit writer sent these to the Department's Deputy Commissioner on the same day. On February 4, 2009, the Department sent a request to the Aleutians West CRSA asking them to describe the activities that are part of this project and are the subject of the specific enforceable policies. They provided this information on February 6, 2009. On February 13, 2009, the Deputy Commissioner determined that the scope of the project potentially includes activities subject to the following local district enforceable policies: Aleutians West CRSA (D, G-1, H (including H-1 and H-2), I (including I-1 and I-2), and K-1.

On April 1 through April 30, 2009, the Department conducted a 30-day ACMP public comment review for ACMP Consistency Review Packet for the Aleutians West CRSA. The Department will not issue this minor general permit for applicants operating in or relocating to the Aleutians West CRSA until the Department completes this final consistency determination.

The Department deleted the 40 C.F.R. 60, Subpart OOO and Subpart Kb provisions in conditions 15 – 19 in the prior GP9 because the department does not have authority under 18 AAC 50 to include federal standards in minor permits. The Department deleted the Annual Compliance Certification Requirements in the prior GP9 since GP9 was issued as a Title V permit, which includes this requirement while the new MG9 is issued as a minor permit, which does not include this requirement. The Department included all other conditions in the prior GP9 in this minor permit.

The Department included a public comment period from 17 February – 19 March 2009 for this permit, as required by 18 AAC 50.542(d). The Department did not receive any comments.

Excluded Facilities

A stationary source is excluded from using this general minor permit if the following applies.

- ▶ The non-metallic mineral processing plant has **emission points with mechanically induced air flow**, such as a fan forcing emission to a stack or control device.

The modeling characterized the rock crusher as a fugitive emission source. The emissions associated with a mechanically induced airflow design would be released from a stack, which could be of various heights, orientations, exit velocities, and various downwash potential. With such a wide range of options (in addition to potential emissions controls – such as cyclones or baghouses), the Department was unable to easily develop a general approach for assessment. Therefore, the Department is unable to include rock crushers with mechanically induced air flow in this minor general permit. However, this minor general permit does allow rock crushers to be enclosed in a building or other structure.

- ▶ The stationary source contains open burning

Open burning has substantive particulate matter emissions and ambient impacts, which were not included in the modeling analysis. The Department did not include exclusions associated with asbestos demolition or renovation; and servicing of refrigeration equipment containing Class I or Class II substances, in this permit. These were included in the GP9 to avoid Title-V requirements, which are not applicable in this minor permit.

- ▶ The stationary source emits more than 100 tons per year of a regulated air pollutant (i.e. is subject to Title V permitting requirements).

The stationary source includes diesel or groups of diesels engine emission units that drive the crusher with a cumulative rating of the engines exceeding 1,100 horsepower. However, the Permittee may exceed 1,100 hp if they get either a combined Minor/Operating General Permit or obtain an ORL under either 18 AAC 50.225 or 18 AAC 50.508(5) to limit the stationary source wide NO_x emissions to less than 100 tons per rolling 12-month period. If a compression ignition (diesel) engine drives the crusher and it will be in one location for less than 12 consecutive months, as defined in 40 CFR 89.2, then the emissions from this engine will not count towards permit applicability.

However, if there is a general permit for the activities listed above, the stationary source may operate under both permits.

TECHNICAL ANALYSIS FOR THE PERMIT CONDITIONS

Conditions 1 – 7 - Visible Emissions Standard Requirements

Applicability: Under 18 AAC 50.544(b), for a minor permit classified under 18 AAC 502(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for

- installation, use and maintenance of monitoring equipment;
- sampling emissions according to the methods prescribed by the Department, and at locations, intervals and by procedure specified by the Department;
- providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- keeping records; and
- making periodic reports on process operations and emissions.

Under 18 AAC 50.055(a)(1) all industrial processes and fuel burning equipment may not reduce visibility through the exhaust effluent by more than 20 percent. Rock crushers are industrial processes and diesel engines are fuel-burning equipment. Condition 1 requires the Permittee to comply with the visible emission standard for rock crushers and diesel engines including fugitive emissions from rock crushers. Conditions 2 – 4 and 5 – 7 address the visible emissions (VE) monitoring, recordkeeping, and reporting (MR&R) for rock crushers and (liquid-fired) diesel engines, respectively. The dust control plan, condition 24.2, also addresses VE MR&R for fugitive emissions.

Factual basis: The visible emission monitoring, recordkeeping and reporting (MR&R) requirements for the Rock Crusher are different from those for diesel engines because rock crushers may produce visible emissions without smoke, which is typically associated with incomplete combustion. In the case of rock crushers, visible emissions may also result from loose particulate from aggregate handling and storage piles.

Thus, the MR&R requirements for diesel engines includes the Method 9 and the Smoke/no Smoke plans which are standard permit conditions required under 18 AAC 50.346(c). MR&R requirements for the rock crushers deviate from those under 18 AAC 50.346(c) by excluding the possibility to monitor visible emissions using the Smoke/no Smoke plan because particulate matter emissions from the aggregate are not considered “smoke.”

The visible emissions standard applies to stationary diesel engines and does not apply to nonroad engines. A nonroad engine has the meaning given in 40 C.F.R. 89.2. An engine will not be considered a nonroad engine if it remains at or will remain at a location for more than 12 consecutive months. An engine used at a single specific location for 12 months or longer ceased to be a nonroad engine when it was placed in that location.

Conditions 2 – 4 were adopted from Standard Permit Condition IX – Visible Emissions and Particulate Matter Monitoring Plan for Liquid-Fired Sources. The conditions were modified to reflect the mobility of rock crushers and the seasonal nature of their operations. The condition requires VE readings after startup from periods of shut down and after relocating the crusher. The conditions were further modified to exclude the Smoke/No Smoke plan since the emissions from the rock crusher include particulate matter from the aggregate during the handling and storage process and not a product of combustion. Condition 3.1a was added to provide emission points capable of producing fugitive

emissions since will be different for each rock crusher operation and can even vary by location. Condition 3.1b(ii) was added to provide a reference to the operating level during the Method 9 observations.

Conditions 5 - 7 MR&R conditions for diesel engines are standard conditions adopted into regulation pursuant to AS 46.14.010(e).

The frequency of monitoring of visible emissions in condition 5.1 was changed from the Standard Operating Condition to reflect the seasonal nature of rock crusher operation. Not requiring the first VE reading for six months could allow the diesel engine to operate without a VE reading for the year. The condition was also changed to reflect that a diesel generator at a rock crusher does not operate on a continuous basis. The new requirement to conduct the first VE reading for the diesel engine within 15 days attempts to ensure the engine's visible emissions are recorded during the operational period of rock crushing. The Department realizes that there is a potential for the rock crusher to operate less than 15 days, but believes this requirement will protect the public.

Reoccurring monitoring for the diesel engine is kept at once per month as rock crushers generally do not operate long enough to warrant the need for reduced monitoring. This also helps to alleviate missing VE readings by keeping the monitoring requirement simple.

The Smoke/No Smoke requirement in condition 5.2 was revised from the Standard Permit Condition to clarify the requirement that **anytime** smoke is observed they are to begin Method 9 observations or take corrective action to alleviate the smoke.

Liquid-Fired Fuel Burning Equipment:

Monitoring – The visible emissions may be observed by either Method-9 or the Smoke/No Smoke plans as detailed in condition 5.2. Corrective actions such as maintenance procedures and either more frequent or less frequent testing may be required depending on the results of the observations.

Recordkeeping - The Permittee is required to record the results of all visible emission observations and record any actions taken to reduce visible emissions.

Reporting - The Permittee is required to report: 1) emissions in excess of the State visible emissions standard and 2) deviations from permit conditions. The Permittee is required to include copies of the results of all visible emission observations with the stationary source operating report.

Gas-Fired Fuel Burning Equipment:

Monitoring, Recordkeeping, and Reporting – The monitoring of gas fired sources for visible emissions is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible VE emissions. However, the Department can request a source test for VE emissions from any smoking equipment.

Conditions 8 – 11 - Particulate Matter (PM) Standard

Applicability: Under 18 AAC 50.544(b), for a minor permit classified under 18 AAC 502(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for

- installation, use and maintenance of monitoring equipment;

MG9 – Rock Crusher Minor General Permit

- sampling emissions according to the methods prescribed by the Department, and at locations, intervals and by procedure specified by the Department;
- providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- keeping records; and
- making periodic reports on process operations and emissions.

Under 18 AAC 50.055(b)(1) industrial processes and fuel burning equipment may not emit particulate matter exceeding 0.05 grains per cubic foot of exhaust gas corrected to standard conditions. Rock crushers are industrial processes and diesel engines are fuel-burning equipment. Condition 8 requires the Permittee to comply with the particulate matter standard for diesel engines and fugitive emissions from rock crushers. This permit does not include MR&R to demonstrate compliance with this particulate matter standard for fugitive emissions since Reference Method 5 of 40 C.F.R. 60, which is used to determine compliance with this standard, is not applicable to fugitive emissions. Conditions 9 - 11 establish MR&R requirements to demonstrate compliance with the PM standard for (liquid-fired) diesel engines.

Factual basis: The particulate matter standard applies to stationary diesel engines and does not apply to nonroad engines. A nonroad engine has the meaning given in 40 C.F.R. 89.2. An engine will not be considered a nonroad engine if it remains at or will remain at a location for more than 12 consecutive months. An engine used at a single specific location for 12 months or longer ceased to be a nonroad engine when it was placed in that location.

Liquid-Fired Fuel Burning Equipment:

For liquid-fired units the MR&R conditions are Standard Operating Permit Condition IX under 18 AAC 50.346(c), adopted into regulation pursuant to AS 46.14.010(e).

Gas-Fired Fuel Burning Equipment:

Although periodic PM monitoring of gas-fired units is waived, the Department has the discretion to request a source test for PM emissions from any fuel burning equipment under 18 AAC 50.220(a) and 18 AAC 50.345(k).

Conditions 12 – 16 - Sulfur Compound Emissions Standard Requirements

Applicability: Under 18 AAC 50.544(b), for a minor permit classified under 18 AAC 50.502(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for

- installation, use and maintenance of monitoring equipment;
- sampling emissions according to the methods prescribed by the Department, and at locations, intervals and by procedure specified by the Department;
- providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- keeping records; and
- making periodic reports on process operations and emissions.

Under 18 AAC 50.055(c) industrial processes and fuel burning equipment may not emit sulfur-compound emissions exceeding 500 parts per million (ppm) averaged over a period of three hours. The diesel engines are fuel-burning equipment; the rock crushers are industrial processes, but do not produce any sulfur-compound emissions. Condition 12 requires the Permittee to comply with this standard for diesel engines. Conditions 13 – 16 establish MR&R requirements to demonstrate compliance with this standard for (liquid and gas-fired) diesel engines.

Factual Basis: The sulfur-compound emissions standard applies to stationary diesel engines and does not apply to nonroad engines. A nonroad engine has the meaning given in 40 C.F.R. 89.2. An engine will not be considered a nonroad engine if it remains at or will remain at a location for more than 12 consecutive months. An engine used at a single specific location for 12 months or longer ceased to be a nonroad engine when it was placed in that location.

Liquid-Fired Fuel Burning Equipment:

For liquid-fired fuel burning equipment the MR&R conditions are Standard Operating Permit Conditions XI and XII under 18 AAC 50.346(c), adopted into regulation pursuant to AS 46.14.010(e).

Gas-Fired Fuel Burning Equipment:

Fuel gas sulfur is measured as hydrogen sulfide (H₂S) concentration in ppm by volume (ppmv). The Department performed calculations⁹ that show that fuel gas containing no more than 4,000 ppm of H₂S will comply with this emission standard at stoichiometric (or zero excess air) combustion conditions. Given the case that excess air is normally greater than zero, the value of 4,000 ppm is conservative.

Equations to calculate the exhaust gas SO₂ concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H₂S concentration of even 10 percent of 4,000 ppm is currently not available in Alaska and is not projected to be available in the foreseeable future.

In any case, the Permittee is required to record the fuel gas H₂S concentration of the fuel gas. The Permittee is required to report as excess emissions whenever the fuel combusted causes sulfur compound emissions to exceed the standards in this condition. The Permittee is required to include copies of the records mentioned in the previous paragraph with the stationary source operating report.

Condition 17 - Ambient Air Quality Protection – General Requirements

Applicability: This condition applies to all rock crushers unless a stricter condition exists in this permit, State Statutes, or Federal Guidelines. 18 AAC 50.010 establishes the ambient air quality standards in the State of Alaska. The Permittee is required to comply with these requirements.

Factual Basis: The Department incorporated the same setback distance requirements as previously established in the 2003 General Permit for Rock Crushers (GP9). The

⁹ See ADEC Air Permits Web Site at <http://www.dec.state.ak.us/air/ap/docs/sulfgas.pdf>, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO₂ Concentration."

Department established the distances based on a generic air quality modeling (see Attachment 2) analysis it conducted to address public complaints regarding alleged impacts.¹⁰ The Department used the U.S. Environmental Protection Agency's (EPA's) ISCST3 dispersion modeling software to conduct the air dispersion modeling in 2003. The Department also created a screening meteorological data set, in order to make the analysis applicable for the entire State.

The Department established the setback distance requirement in condition 17.1 in order to protect the 24 hour PM-10 ambient air quality standards. The Department established the setback distance restriction in condition 17.2 to protect the PSD increment for PM-10. The requirement for a dust control plan in condition 24.2 for operations within 2,000 feet of the nearest off site inhabited structure is based on predicted 24 hour impacts of the ambient standard for PM-10.

As previously noted in the 2003 GP9, the setback distance requirements are based on the best information available to the Department. They do not guarantee that an operation cannot violate the ambient air quality standards or increments, or create a public air quality nuisance. Therefore, the Department included a note that if the operation results in complaints, the complaints are subject to investigation. The note lists some of the possible outcomes of the investigation.

Condition 18 – Pollution Control Equipment Breakdown Reporting

Applicability: This condition applies to all emission units at the stationary source to help ensure compliance with 18 AAC 50.544(b)(2), for a minor permit classified under 18 AAC 502(b). This carries over condition 26.3 of the prior 2003 GP9.

Factual Basis: Because of public complaints, the Department included these conditions to better insure compliance with the conditions of this permit. Permittees will better assure compliance and minimize compliance by ensuring that the emission units are well maintained and pollution control equipment, if used, functions properly. This is an extension of Good Air Pollution Control Practices, condition 23.

Condition 19 – Relocation and Reporting Site Selection

Applicability: This relocation condition applies to all Rock Crushers because Alaska Statute (AS) 46.14.210 authorizes the Department to issue a general permit that is applicable to more than one stationary source similar in emission unit structure. The permit also contains siting requirements that limit the rock crusher from operating within specified distances to occupied structures, and has monitoring requirements based upon startups at new locations.

This site selection condition applies to all Rock Crushers because 18 AAC 50.110 prohibits pollution that is injurious to human health or welfare, animal or plant life or property, or which would unreasonably interferes with the enjoyment of life or property. This condition applies unless a stricter condition exists in this permit, State Statutes, or Federal Guidelines.

¹⁰ It is important to note that most rock crushers operating under the general permits did so without public complaints to the department.

Factual Basis: Because of public complaints, the Department conducted air dispersion modeling to predict the impacts of Rock Crushers on ambient air. Sources modeled were the stack emissions and fugitive dust emissions modeled as volume sources. Sources modeled were the stack emissions (as horizontal or vertical point sources), and fugitive dust emissions, modeled as volume sources. See Attachment 2 for a description of modeling performed. The new locations must comply with the distance requirements in conditions 17.1 – 17.2, give adequate consideration to the siting issues described in condition 17.3 and provide a dust control plan per condition 24.2 if within 2,000 feet of the nearest off site inhabited structure.

This location requirement is based on the best information available to the Department. It does not guarantee that an operation cannot violate ambient standards or cause violations against the prohibition of air pollution if the equipment is not properly run, or fugitive emissions are not controlled. Therefore, the condition also advises the Permittee that if the operation results in complaints, the complaints will be investigated. The condition lists some of the possible outcomes of the investigation.

Conditions 20 - Administration Fees

Applicability: This condition requires the Permittee, owner, or operator to pay administration fees as set out in regulation. Paying administration fees is required as part of obtaining and holding a permit with the department or as a fee for a department action.

Factual Basis: The owner or operator of a stationary source who is required to apply for a permit under AS 46.14.130 shall pay to the department all assessed permit administration fees. The regulations in 18 AAC 50.400-405 specify the amount, payment period, and the frequency of fees applicable to a permit action.

Conditions 21 and 22 - Emission Fees

Applicability: The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions. This is Standard Permit Condition I under 18 AAC 50.346(b)(1), adopted into regulation pursuant to AS 46.14.010(e).

Factual Basis: These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The default assessable emissions are emissions of each air pollutant authorized by the permit (AS 46.14.250(h)(1)(A)). Air pollutant means any regulated air pollutant and any hazardous air pollutant. Therefore, assessable emissions under AS 46.14.250(h)(1)(A) means the **potential** to emit any air pollutant identified in the permit, including those not specifically limited by the permit. For example, hydrogen chloride (HCl) emissions from an incinerator are assessable emissions because they are a hazardous air pollutant, even if there is currently no emission limit on HCl for that class of incinerator.

The conditions also describe how the Permittee may calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air pollutant. Therefore,

fees based on actual emissions must also be paid on any pollutant emitted whether or not the permit contains any limitation of that pollutant.

This standard condition specifies that, unless otherwise approved by the department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match. The Permittee will normally pay for actual emissions - just with a one-year time lag.

Projected actual emissions may differ from the previous year's actual emissions if there is a change at the stationary source, such as changes in equipment or an emission rate from existing equipment.

The emission factors in the Rock Crusher Emission Calculation Guide are taken from US EPA publication AP-42 *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition* as adopted by reference in 18 AAC 50.035.

The Permittee may use other emission factors as outlined in Rock Crusher Emission Calculation Guide and Standard Permit Condition I provided those emission factors have been approved by the Department.

If the Permittee does not choose to annually calculate assessable emissions, emissions fees will be based on "potential to emit" (PTE).

The address to submit Emission Fee Estimates was changed from the Standard Permit Condition. This address was changed to reflect the processing center for Emission Fee Estimates.

Condition 23 - Good Air Pollution Control Practices

Applicability: This condition ensures compliance with the applicable requirements under 18 AAC 50.346(b)(5) *Standard Operating Permit Condition VI - Good Air Pollution Control Practices* and applies to all emission units, **except** those subject to federal emission standards. Also, under 18 AAC 50.544(b)(2), for a minor permit classified under 18 AAC 502(b), the Department will include a condition requiring the owner to

- perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;
- keep records of any maintenance that would have a significant effect on emissions (the records may be kept in an electronic format); and
- keep a copy of either the manufacturer's or the operator's maintenance procedures.

Factual basis: The condition requires the Permittee to comply with good air pollution control practices for all emission units. The permit contains the provision exactly as required by regulation. This is the same as 18 AAC 50.346(b)(5) and requires that all permits issued by the State of Alaska contain the provisions of Standard Operating Permit Condition VI – Good Air Pollution Control Practices unless more specific requirements adequately meet the requirements.

Condition 24 – Reasonable Precautions to Prevent Fugitive Dust

Applicability: This condition expands the requirements under 18 AAC 50.346(c) *Standard Operating Permit Condition X – Reasonable Precautions to Prevent Fugitive Dust* to provide a condition that more adequately meets these requirements given the significant sources of fugitive dust that may be generated by the Stationary Source. This condition applies to all Rock Crushers.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air. 18 AAC 50.045(d) requires an operator to take reasonable precautions to prevent fugitive dust when handling bulk materials. The condition lists examples of reasonable precautions.

This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engineering in an industrial activity in accordance with the applicable requirement in 18 AAC 50.045(d). Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the stationary source.

If the Rock Crusher is to be located within 2,000 feet of a business, residence or other inhabited structure, the Permittee under this minor general permit must implement the plan under condition 24.2 or get the Department’s approval to implement a different plan. The plan must be specific to any location named in the application.

The “2,000 feet” distance requirement came from a circa-2003 dispersion modeling analysis conducted in support of the 2003 previous General Permit (GP9) for Rock Crushers. Modeling predicted that during dry conditions, if precautions are not taken to control emissions from fugitive sources, the 24-hour PM-10 ambient air quality standard could be violated up to 2,000 feet away.

Conditions 25 and 26 - Air Pollution Prohibited

Applicability: This condition ensures compliance with the applicable requirement in 18 AAC 50.110. The condition prohibits the Permittee from causing any emission 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. Air Pollution Prohibited requirements apply to the stationary source because the Rock Crusher will have emissions and because activities at or associated with the stationary source may result in complaints from the public. The Department adopted this Standard Permit Condition II into 18 AAC 50.346(a) pursuant to AS 46.14.010(e).

Factual Basis: While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

Public complaints are normally an indication that a violation of 18 AAC 50.110 occurred. The Permittee is required to investigate and report any complaints. The Permittee must keep records of the date, time, and nature of all complaints received and summary of the

investigation and corrective actions undertaken for these complaints and to submit copies of these records upon request of the Department.

Condition 27 - Requested Source Tests

Applicability: Applies because this is a standard condition to be included in all permits.

Factual Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(a) and applies because this is a standard condition to be included in all operating permits under 18 AAC 50.345(k). Monitoring consists of conducting the requested source test.

Conditions 28 - 30 - Operating Conditions, Reference Test Methods, Excess Air Requirements

Applicability: Applies because these are standard conditions to be included in all permits.

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with conditions 28 – 30 consist of the test reports required by condition 35.

Condition 31 - Test Exemption

Applicability: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(a) and applies when the source exhaust is observed for visible emissions.

Factual Basis: The requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Conditions 32 – 35 - Test Deadline Extension, Test Plans, Notifications and Reports

Applicability: These conditions ensure compliance with the applicable requirement in 18 AAC 50.345(l) – (o) and applies because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with these conditions.

Condition 36 - Recordkeeping Requirements

Applicability: Applies because the Permittee is required by the permit to keep records to demonstrate compliance with the terms and conditions of the permit and regulations.

Factual Basis: The condition restates the regulatory requirements for recordkeeping and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide an evidence of compliance with this requirement.

Condition 37 - Information Requests

Applicability: This condition requires the Permittee to submit requested information to the Department. This is a standard condition from 18 AAC 50.345(i) of the State approved operating permit program effective November 30, 2001.

Factual Basis: This condition requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 38 - Submittals

Applicability: This condition applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition lists the Department's appropriate address for reports and written notices. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the standard reporting and notification requirements of this permit.

Condition 39 - Certification

Applicability: This condition requires the Permittee to comply with the certification requirement in 18 AAC 50.205 and applies to all Permittees. This standard condition is required in all operating permits under 18 AAC 50.345(j).

Factual Basis: This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be **certified** with the operating report, even though it must still be **submitted** more frequently than the operating report. This condition supplements the reporting requirements of this permit.

Condition 40 - Excess Emission and Permit Deviation Reports

Applicability: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240. The Department adopted this condition from Standard Permit Condition III under 18 AAC 50.346(b)(2) pursuant to AS 46.14.010(e). The Department copied **Section 10, ADEC Notification Form** Standard Permit Condition IV under 18 AAC 50.346(b)(3).

Factual Basis: This condition satisfies two State regulations related to excess emissions - the technology-based emission standard regulation and the excess emission regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation. The Permittee is required to notify the Department when emissions or operations deviate from the requirements of the permit.

Condition 41 - Operating Reports

Applicability: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(6) and applies to all permits. The Department copied this condition from Standard Permit Condition VII. No format is specified.

Factual Basis: The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

MG9 – Rock Crusher Minor General Permit

This condition allows the Permittee to submit one of the required two copies of the report electronically in lieu of paper. This meets the requirements of 18 AAC 50 and Department needs, provided the electronic version is compatible with ADEC software, as the Department can more efficiently distribute the electronic copy to staff in other locations.

During the transition period from the previous 2003 GP9 General Permit (if applicable), the Permittee may provide one report accounting for each permit term or condition and the effective permit at that time. The Permittee may chose to provide two reports: the first report accounting for reporting elements of permit terms and conditions from the end date of the previous operating report until the date of expiration of the old permit, and a second operating report accounting for reporting elements of terms and conditions in effect from the effective date of the renewal permit until the end of the reporting period.

Condition 42 - Nonroad Engines

Applicability: Nonroad engines are not subject to the standards approved under the State Implementation Plan for the air pollution control for stationary sources. Furthermore, 18 AAC 50.100 states that the potential to emit from nonroad engines do not count towards classification of a stationary source or modification under AS 46.14.130.

Factual Basis: This condition requires the Permittee to keep records of location and specifications of nonroad engines at any location where they operate. A nonroad engine has the meaning given in 40 C.F.R. 89.2. An engine will not be considered a nonroad engine if it remains at or will remain at a location for more than 12 consecutive months. An engine used at a single specific location for 12 months or longer ceased to be a nonroad engine when it was placed in that location.

Conditions 43 – 49– Terms to Make Permit Enforceable

Applicability: These are standard conditions required under 18 AAC 50.345(a) - (c)(2) and (d) – (h) for all minor permits.

Factual Basis: These are standard condition for compliance required for all minor permits.

Attachment 1 Emission Reporting and Emission Fee Estimate

Submit the following information to the Department no later than March 31st of each year at:

ADEC Air Permits Program
610 University Avenue
Fairbanks, AK 99709- 3643

Or

FAX to (907) 451-2187

Or

Email to: DEC.AQ.Airreports@alaska.gov
(If emailed, the report must be signed and certified in accordance with 18 AAC 50.345(j).)

Or

Submit emissions online at the following website:
<https://myalaska.state.ak.us/deca/air/airtoolsweb/>

Stationary Source Name _____

Permit Number _____ Date: _____

Emission Fee Estimate for _____
(State fiscal year)

Table 1 Total Emissions & Assessable Emission Fee Estimate

Pollutant	Rock Crusher	Diesel Generator	Assessable Emissions
NO _x			
CO			
SO ₂			
PM-10			
VOC			

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.

Signature

Printed Name

Title

Attachment 2 Rock Crusher Dispersion Modeling Summary

Alaska Department of Environmental Conservation Dispersion Modeling Summary For Rock Crushers

Prepared by
Bill Walker
April 24, 2003

This summary is to support the renewal of general air quality operating permits for rock crushers. The department specifically requests comment on the assumptions used to characterize these facilities, and on how we should use the information produced by the modeling analysis.

Background

On April 14, 1998 the department issued a general permit for transportable or stationary rock crushers. The first round permits were not supported by dispersion modeling.

During the life of that permit, the department has received complaints about emissions from rock crushing operations. The complaints involve the potential for adverse impacts on human health and welfare.¹¹

The department is issuing the renewal permits under the authority of AS 46.14.210, but not AS 46.14.215. However, because of public health concerns that arose during the life of the original permits, I have done dispersion modeling as provided by 18 AAC 50.201. This modeling serves as the basis for proposed permit conditions.

Model and Methods Used

For this modeling analysis I used ISCST3. This allowed sources to be distributed over a three dimensional space. Emissions are modeled as volume sources based on photographs of a rock crushing operation. I took emission rates from AP-42 for crushers, screens, conveyors and diesel engines.

Meteorological Data

The meteorological data set was a screening data set similar to the one used in SCREEN3. It was applied to ISCST3 by Pat Hanrahan of the State of Oregon Department of Environmental Quality. The model predicted one hour ambient concentrations. To get 24 hour concentrations, I multiplied the results by 0.4. This is consistent with EPA guidelines.

¹¹ It is important to note that most plants operating under the general permits did so without public complaints to the Department.

Background Concentrations

Background concentrations had to be applied statewide. I used the highest concentrations measured at Healy. The location of the Healy monitoring site intended to gather background concentrations, not to measure impacts from the Healy power plants. The background concentration was:

- PM-10 24 hour – 31 $\mu\text{g}/\text{m}^3$.

Receptors

Receptors were placed using a polar grid from a few meters from the center of the operation to a maximum of 2000 meters. Receptors were modeled assuming flat terrain, and terrain heights of 10, 15, and 20 meters.

Downwash

I used one downwash structure based on one of the crusher operation photographs. It approximates a crusher and screen mounted on a trailer bed. The dimensions are 40 feet long by 12 feet high by 8 feet wide.

PM-10

I modeled crushers, screens, and conveyors as one volume source 120 feet square, and 5 meters tall (estimated from crushing operation photographs).

Emission factors came from EPA's AP-42, Table 11.19.2-2 for crushed stone processing operations. Activity rates were based on 127 tons per hour (tph), as follows:¹²

- 127 tph in initial crusher
- 127 tph in initial screen
- ½ to second crusher and second screen
- ½ of that to tertiary crusher and recycle back to second screen

I used two other volume sources, one for unpaved road dust from loader operation, and the other from AP-42 13.2.4 for drop operations from the final processing to the storage piles.

Again from crusher operation photograph, I assumed the use of two 500 hp diesel engines (modeled as point sources). I selected 500 hp from the power requirement for a Pioneer cone crusher similar to the Spokane crusher in the photograph.

Emission factors were all based on 24 hours of operation per day, but I used a scaling factor to adjust results to 12 hours per day.

I did best and worst case modeling. The best case assumed that road dust is controlled well enough to be minimal. I used EPA's emission factors for controlled sources or factors calculated based on high moisture content. For the worst case option, I used emission factors for uncontrolled sources, or factors calculated assuming high road surface silt content and low moisture. Emission factors for diesel engines did not change.

¹² 127 tons per hour was the same activity rate used for modeling asphalt plant. It is based on 150 tons per hour of hot mix asphalt.

MG9 – Rock Crusher Minor General Permit

With best case assumptions, modeling predicted compliance with the 24 hour PM-10 standard at 130 meters from the center of the operation and beyond [rounded to 400 feet from the edge of the operation], and with the increment at 350 meters and beyond [rounded to 1000 feet].

The worst case assumptions for fugitive emissions predicted that the ambient standard could be violated at a much greater distance from the crushing operation [700 meters – rounded to 2000 feet from the edge of the operation]. There is no set of limitations or practices to control fugitive dust that the permit could impose that would be both reasonable and effective in all cases. Therefore, the permit uses results from worst case modeling for requiring a dust control plan. If a crushing operation is within the 2000 feet of a residence or other occupied structure, the application must contain a site specific dust control plan, and the operator must comply with that plan.

Modeling at elevated terrain heights did not change any of these distances.

[Filesnames: crushrco.bst, crushrun.bst]