

Alaska Department of Environmental Conservation

Air Permits Program

TECHNICAL ANALYSIS REPORT

for

Air Quality Control

Minor General Permit 3

for

Asphalt Plants

Prepared by: Jim Plosay, Adam Reed, and Dave Jones

Date: March 29, 2017

Revision 4

Prepared by: Dave Jones, Peter Saengsudham

Date: April 1, 2023

INTRODUCTION

This permit is intended for asphalt plants that are required to have a permit because they are classified as needing a minor permit under 18 AAC 50.502(b)(1), i.e., they have a rated capacity of at least five tons per hour of hot-mix asphalt product.

Asphalt plants often include rock crushers to break down the oversize material to be fed into the process, or to recycle asphalt pavement. An applicant must apply for Minor General Permit 9 (MG9) for rock crushers to operate the rock crusher. The MG3 Rev. 4 permit allows and authorizes a rock crusher to be located with the asphalt plant only if the permittee has a separate minor source specific permit or minor general permit (MG9) for the rock crushing activities.

Activities co-located with a major source of air pollution are not covered by this minor general permit because the underlying analysis to protect ambient air quality did not include impacts from nearby emitting activities not covered by this permit. The Department assumed an annual 3,650 hours of operation in its potential to emit (PTE) calculations. This assumption was determined to be representative for the MG3 based on a review of currently active sources and the conservative operational assumptions detailed in the modeling memorandum for the 2003 General Permit 3.

PERMIT HISTORY

First Minor General Permit 3 (MG3)

The Alaska Department of Environmental Conservation (Department) issued the first MG3 on April 8, 2009. The Department included a public comment period from June 2nd through July 2nd, 2008 for the original 2009 MG3 permit, as required by 18 AAC 50.542(d). The Department received one comment for this permit from Charles Wilkes, Wilder Construction Company. The Department's response to this comment is in the Response to Comments document.

MG3 Revision (Rev.) 1

The Department issued Revision 1 to MG3 on April 1, 2014 to restructure the conditions and appearance of the permit from the previous MG3 permit in order to improve user accessibility and compliance. Conditions in the MG3 Rev. 1 that have been modified from the MG3 are listed in Table 1 to TAR for MG3 Rev. 1.

The Department included a public comment period from April 3 through May 3 2013 for the MG3 Revision 1 as required by 18 AAC 50.542(d). The comment period was extended to 24 May 2013 after requests were received by the Department from Permittees. The Department received 17 comments from Colaska, Inc., three comments from Brad Quade at Anchorage Sand & Gravel Co., Inc., 14 comments from Shawn Crouse at Granite Construction Company, and 11 comments from Department employees. The Department's response to these comments are available in the Response to Comments document for the MG3 Rev. 1.

MG3 Rev. 2

The Department issued Revision 2 to MG3 permit effective April 1, 2015 to correct a material mistake in the Revision 1 permit. After public comment the Response to Comments document for MG3 Rev. 1 indicated that the schedule of monitoring of asphalt plant PM emissions would not be changed from the original permit. The Department had proposed that the frequency of Method 9 observations required under Condition 5.1 (in Revision 1) be changed from once every 30 operating days to once every 14 operating days to match the schedule of the MG9 rock crushing PM emission

monitoring. The Department overlooked this change and made the correction with Revision 2, returning the frequency to once every 30 operating days.

MG3 Rev. 3

The Department issued MG3 Rev. 3 on April 1, 2017 to restructure the permit conditions from the 2015 MG3 Rev. 2 in order to improve user accessibility and reduce the compliance burden for Permittees. Prior to the issuance of MG3 Rev. 3, the Department conducted workgroup discussions with the Associated General Contractors (AGC) of Alaska from October 2016 through January 2017 to simplify conditions of the minor general permit and make compliance with the permit clearer for industry. The Department published MG3 Rev. 3 for the required public comment period from February 2, 2017 through March 3, 2017, as required by 18 ACC 50.542(d).

MG3 Rev. 3 new conditions include Condition 4 (Equipment Operated) that used to be Condition 17 of the MG3 Rev. 2. Condition 4 now incorporates additional requirements to address rental of emissions units both to and from the permitted source, and clarification that source tests may be conducted during any point during the fifth year after the previous source test under Condition 7.1(b).

Table 1 includes a comparison of the conditions from the MG3 Revision 2 to the MG3 Revision 3.

MG3 Rev. 4

The Department issued MG3 Rev. 4 on April 1, 2023, to address changes within 18 AAC 50, make technical and grammatical corrections, reorganize and reformat text in the permit and TAR for consistency and clarity, and to update weblinks and the Department’s Standard Permit Conditions (SPCs). The corrections and updates to the SPCs have already been through the public comment process. Therefore, the Department did not public notice MG3 Rev. 4.

Table 2 includes a comparison of the conditions from the MG3 Revision 3 to the MG3 Revision 4.

**Table 1
Condition changes from MG3 Rev. 2 to MG3 Rev. 3**

MG3 Permit Rev. 2 Condition No.	Description	MG3 Permit Rev. 3 Condition No.	Description of Change
1	Ambient Air Quality Protection	1	Condition 1.6 added to address co-located asphalt plants and rock crushers.
None	Co-located Equipment	1.6	Co-located asphalt facilities are addressed with provision allowing co-located rock crushing operations with separate MG9 permit added.
2	Relocation and Reporting of Site Selection	2	Revised Condition language and relocation sub-conditions
None	Preapproved Locations	2.1	Relocation allowed to pre-approved locations with 8-hr notification using Air Online Services (AOS). All other relocations now require five-day notification
None	New Locations	2.2	10 Day notice requirement relaxed to 48 hours for new locations using AOS and 5 days using other notification methods

None	Unexpected Breakdown and Repair	2.3	Condition added authorizing relocation for repair requiring notice within 24-hr after move for repair
3	General Recordkeeping	3	No Change
17	Equipment Changes	4	Permit language moved from Condition 17 to Condition 4. Condition now requires reporting all equipment operated with each FOR.
None	Rental Agreements	4.1	Requirement to report equipment listed in the EU inventory which is leased, rented or provided to a third party for operation under a business agreement to the Department within seven days of business agreement.
4	General Reporting	5	Changes in sub-conditions
4.1	Submittals	5.1	Reporting methods added allowing reporting to Air Online Services and email to DEC Air Reports
4.2	Electronic Reporting	Removed	Incorporated into Condition 5.1
4.3	Certification	5.2	No Change
4.4	Operating Reports	5.3	No Change
4.5	Information Requests	5.4	No Change
5.1	Visible Emissions Standard Requirements for Asphalt Plants	6.1	The PM opacity observation required once every 30-operating days and within two days of a shutdown exceeding five days modified to require Method 9 observations within two days of the production during each calendar month of operations. Additional reporting added for colocation of asphalt plants.
5.2 – 5.3	Visible Emissions Standard Requirements for Diesel Engines	6.2 – 6.3	No Change
6	HMA Plant Particulate Matter (PM) Standard Requirements	7	No Change
6.1	Required Testing and Frequency of Testing	7.1	Language altered in Condition 7.1(a) to allow Permittee to conduct source test during any time during the entire fifth year after the previous source test
6.2	HMA plant MR&R Requirements	7.2	No Change
7	Sulfur Compound Emission	8	Condition added to accommodate sources which use bulk fuel to fuel equipment tanks. Reporting requirement changed to require the permittee certify only ULSD or LSD was consumed in fuel burning equipment with each FOR
8	Pollution Control Equipment Breakdown Reporting	9	No Change
9	Excess Emissions and Permit	10	Condition added to require the reporting

	Deviation Reports		of excess emissions for co-located sources when 12-month rolling actual emissions exceed 100 tons of a criteria air pollutant
10	Air Pollution Prohibited	11	No Change
11	Nonroad Engines	12	No Change
None	Stored Equipment	13	Condition added to address stored emissions units co-located at a permitted facility
12	Change of Ownership	14	No Change
13	Administrative Fees	15	No Change
14	Assessable Emissions & Fees	16	No Change
15	Good Air Pollution Control Practice	17	No Change
16	Reasonable Precautions to Prevent Fugitive Dust	18	No Change
17	Equipment Changes	4	Condition moved from condition 17 to Condition 4. Condition 4.1 adds requirements to address rented and leased equipment of emissions units operated under this permit.
18	Terms to Make Permit Enforceable	19	No Change
19	Source Testing Requirements	20	No Change

Table 2
Condition changes from MG3 Rev. 3 to MG3 Rev. 4

MG3 Permit Rev. 3 Condition No.	Description	MG3 Permit Rev. 4 Condition No.	Description of Change
Cover Pages	Cover Pages	Cover Pages	Updates to Table B and footnotes to add clarity.
Table of Contents	Table of Contents	Table of Contents	Page numbers updated and new Assessable Emissions Estimates and Emission Inventory Reporting conditions added. Added bookmarks and pages for appendices and forms.
Table C	Emissions Limits	Table D	Moved the table down, closer to the relevant conditions for compliance with the state standards for visible emissions, particulate matter and sulfur compound emissions, for better organization and readability. Included the words “or modified” in the particulate matter standards to match 18 AAC 50.055(b)(5). Deleted “with stack diameters 18 inches or greater” and “15% for diesel generators with stack diameters smaller than 18 inches” – these terms are not limits, but are used as thresholds for PM monitoring for diesel

			engines specified in SPC IX - Visible Emissions and PM Emissions Monitoring Plan for Liquid Fuel-Burning Equipment and Flares. Added the PM monitoring thresholds for diesel generators for clarity and ease of cross-referencing.
Table D	Operating Report Schedule	Table C	Table number changed due to moving down of (previous) Table C – Emissions Limits (now Table D).
1	Ambient Air Quality Protection Requirements	1	Revised Condition 1.3 to clarify that it only applies to engines that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii). Also deleted Condition 1.4, because 18 AAC 50.025 has been repealed.
1.3	Nonroad engine location restrictions	1.3	Added MR&R requirements by referencing Condition 12.
1.5	Additional Restrictions for Bells Flats (Kodiak) – ULSD fuel requirement	1.4	Added MR&R requirements by referencing Condition 8.
1.6	Co-Located Equipment	1.5a and 1.5b (new)	Moved MR&R requirements for co-located asphalt plants from the VE MR&R table under Condition 6.1 as new Conditions 1.5a and 1.5b. Added an option in Condition 1.5b for using the Department’s MG3 Assessable Emissions Spreadsheet available on the Department’s website for reporting emissions when the Permittee has collocated asphalt plants.
2	Relocation Reporting Requirements	2	No Change
3	General Recordkeeping	3	No Change
4	Equipment Operated	4	No Change
5.1	Submittals	5.1	Clarified mail submittals to “ADEC Air Compliance Program” which did not exist when the MG3 Rev. 3 was finalized.
5.2	Certification	5.2	Revised Condition 5.2 to reflect SPC XVII - Reporting Requirements updates.
5.3	Operating Reports	5.3	Fixed a typographical error removing the word “either” in the first sentence. Added “for the period covered by the report” in the second sentence to clarify instructions and to better match SPC VII – Operating Reports.
5.4	Information Requests	5.4	No Change
6	Visible Emissions	6	Added “(VE)” after the subtitle “Visible Emissions and “Comply with the visible

			emissions limits for asphalt plants and diesel engines, as set out in Table D” for clarity and consistency.
6.1	MR&R table for Visible Emissions for Asphalt Plant	6.1	<p>Replaced “Visible emissions limits are listed in Table C” with “VE monitoring, recordkeeping, and reporting (MR&R) requirements:” to avoid redundancy and for clarity.</p> <p>Reworded the 1st bullet to clarify Method 9 procedures. Replaced “with” with “using” in the 3rd bullet on the “Monitor” row for clarity and to simplify.</p> <p>Moved MR&R requirements for co-located asphalt plants from the VE MR&R table under Condition 6.1 as new Conditions 1.5a and 1.5b.</p> <p>Reorganized reporting requirements in the MR&R table for clarity and better readability.</p>
6.2	MR&R table for Visible Emissions for Diesel Engines	6.2	<p>Added “stationary” to the first bullet point to clarify that Condition 6.2 is not applicable to nonroad diesel engines.</p> <p>Replaced “Visible emissions limits are listed in Table C” with “VE monitoring, recordkeeping, and reporting (MR&R) requirements:” to avoid redundancy and for clarity.</p> <p>Added language from SPC IX, to clarify requirements, including changing the observation criteria from “smoke” to “visible emissions” when conducting Smoke/No Smoke.</p> <p>Reorganized reporting requirements in the MR&R table for clarity and better readability.</p>
6.3	Corrective Actions for Smoke Observed in Condition 6.2 (for diesel engine only)	6.3 and 7.1	Split Condition 6.3 into new Conditions 6.3 and 7.1 and updated to match the language in SPC IX Conditions 2.5 and 7.1 – 7.4.
None	Particulate Matter (PM) Emissions	7	Added as a lead condition for PM emissions for consistency and clarity.
None	PM Emissions Monitoring for Diesel Engines	7.1 – 7.3 and MR&R table for diesel engines table	Added MR&R language from SPC IX that addresses MR&R requirements for liquid fuel-burning engines.
7	PM Emissions from Asphalt Plant	7.4	Changed the subtitle to “PM Emissions Monitoring for Asphalt Plant” for clarity

			<p>and consistency. Deleted “Particulate matter emissions limits are listed in Table C” to avoid redundancy. Merged (previous) Condition 7.1 with new Condition 7.4.</p> <p>Merged the two MR&R tables for Asphalt Plant to simplify and avoid confusion.</p> <p>Included the words “or modified” in the particulate matter standards for Condition 7.4.c.i to match 18 AAC 50.055(b)(5). Also corrected a broken link in the reporting section of Condition 7.4 (previously Condition 7.2) that now points to Condition 18.2 (previously Condition 17.2).</p>
8	Sulfur Compound Emissions	8	<p>Included “SO₂” in Condition 8 subtitle. Reworded the condition to include fuels used for stationary and nonroad engines and asphalt burners, for clarity and accuracy.</p> <p>Added “Monitor and” in the table subtitle for clarity.</p> <p>Reorganized and reworded reporting requirements in the MR&R table for clarity and better readability.</p>
9	Pollution Control Equipment Breakdowns	9	<p>Added “required under Condition 5.3” in the 2nd bullet for Report to cross reference the relevant FOR condition, for consistency.</p>
10	Excess Emissions and Permit Deviations	10	<p>Updated reporting requirements to more closely match SPC III – Excess Emissions and Permit Deviations Reports and fixed a broken weblink for Air Online Services.</p> <p>Added “that occurred during the reporting period by citing the dates of those reports, or include a copy of those Excess Emissions and Permit Deviations reports” in the last bullet to clarify information required, as specified in SPC VII – Operating Reports.</p>
11	Air Pollution Prohibited	11	<p>Added “required under Condition 5.3” in the 1st bullet for Report to cross reference the relevant FOR condition, for consistency.</p>
12	Nonroad Engines	12	<p>Revised to clarify that condition only applies to engines that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii). Also added additional clarifying language around what constitutes as “relocated” under 40 C.F.R. 1068.30-Nonroad Engine-(2)(iii).</p>
13	Stored Equipment	13	<p>Modified language to clarify that Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-</p>

			Nonroad Engine-(1)(iii).
14	Change of Ownership	14	Updated broken weblink for Department’s Permit Information website.
15	Administrative Fees	15	Change subtitle to “Fee Requirements” and modified condition to match the Department’s current Minor Permit Template which includes all fees under 18 AAC 50.400-499 and not just administrative fees.
16	Assessable Emissions & Emission Fees	16 and 17	Removed “in quantities greater than 10 tons per year” to reflect 9/7/22 revision in 18 AAC 50.410. Modified the Condition to include the option to use the Department’s MG3 Assessable Emissions Spreadsheet available on the Department’s website when reporting assessable emissions. Also modified language of the condition to better match SPC I – Emissions Fees.
17	Good Air Pollution Control Practices	18	Fixed a typographical error (“folloing” to “following”) in the Record section. Added “the records may be kept in electronic format” in the Record sections to closely match SPC VI - Good Air Pollution Control Practices language. Added “required under Condition 5.3” in the Report sections to cross reference the relevant FOR condition, for consistency.
18	Reasonable Precautions to Prevent Fugitive Dust	19	No Change
19	Terms to Make the Permit Enforceable	20	Moved Rev 3 Condition 19.8 to as subcondition 20.7.d (previously would have been 19.7.d) in this Rev. 4 for clarity, as it is a subcondition of the requirement to allow a Department inspector on-site.
None	Emission Inventory Reporting	21	Added SPC XV – Emissions Inventory Reporting condition to the permit with modifications to remove requirements only applicable to large Title V facilities. Additionally, the thresholds for triennial reporting were lowered from the SPC in order to capture all facilities subject to minor permitting to better meet the state’s reporting requirements to EPA, and under the authority of 18 AAC 50.275.
20	Source Testing Requirements	22	Updated Test Exemption and Test Plan Conditions to include new Conditions 6.1 through 7.1.a and Condition 7.1.b, respectively. Corrected the cross reference to the

			Certification Condition 5.2. in the Test Reports Condition.
Appendix A	Assessable Emissions Calculation (MG3) Form	Appendix A	Corrected two typographical errors and a broken cross reference to Table A. Changed the diesel engine rating from “Less than 600 hp” to “Up to 600 hp” to match AP-42. Modified assessable emissions section by removing references to rounding pollutants below 10 tons to 0, in order to be consistent with new Condition 16 and 18 AAC 50.410 (effective 9/7/2022).
Appendix B	Fugitive Dust Control Plan	Appendix B	Changed generic language referencing “all MG permits” to specifically reference MG3 and MG9 permits, to clarify that we are not referring to the MG1 or MG2 permits.
Form 1	Relocation Notification	Form 1	No Change
Form 2	Excess Emissions and Permit Deviation Reporting Form	Form 2	Updated to latest version found in SPC IV – Notification Form (revised 7/22/2020).
Form 3	Emission Reporting and Emission Fee Estimate	Form 3	Updated reporting and certification instructions to reference Conditions 5.1, 5.2, and 17 and updated table to specify it only applies to stationary diesel generators.
Form 4	MG3 FOR Form	Form 4	Added a new section for Co-located Equipment (moved from Visible and PM Emissions sections for Asphalt). Changes in Visible Emissions – Diesel Engines section: <ul style="list-style-type: none"> Modified the Smoke/No Smoke plan observation summary section, changing “smoke observations” to “visible emissions observations” to match the new language in Condition 6. Reformatted Method 9 Observations Summary table and added columns for “Emissions Units” and “Highest 18-consecutive-minute Average”. Added “(from Conditions 6.2 through 7.3)” next to “All Method 9 Observation forms attached” for clarity. Added a new section to address reporting requirements for PM emissions for Diesel Engines. Changed the Nonroad Engine section to clarify that the Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).

			Updated the submittal instructions to reference Conditions 5.1 and 5.3.
Form 5	Method 9 Visible Emissions Observations	Form 5	No Change
Form 6	Smoke/No Smoke Log	Form 6	Modified the Smoke/No Smoke plan, changing smoke observations to visible emissions observations to match the new language in Condition 6.
Form 7	Compliant Summary Form	Form 7	No Change
Form 8	Nonroad Engine Location Log	Form 8	Included a footnote to clarify that the Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).
Form 9	Equipment Operated Report Form	Form 9	Added table heading “Table 1 – . Operational Equipment List”
Form 10	Stored Non-Operating Equipment Log	Form 10	Added table heading “Table 1 – . Non-operational Equipment List”
Form 11	Rental Equipment Notification	Form 11	Corrected a reference to the rental agreement Condition 4.1
Form 12	Asphalt Plant Daily Production Log	Form 12	No Change

EXCLUDED FACILITIES

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

1. The stationary source is subject to a fuel consumption limit or other stationary source-specific requirement established in a construction permit, or air quality control permit under 18 AAC 50.400 (effective prior to 1/18/97).

This does not include a limit established because a source test was conducted at less than full rated capacity. This exclusion is not applicable if the owner or operator obtains an owner requested limit (ORL) under 18 AAC 50.225, or another general or source-specific permit that covers these requirements.

2. The stationary source is subject to any standard in 18 AAC 50.055(a)-(f) other than standards for fuel burning equipment in (a)(1), (a)(4), (b)(1), (b)(5), and (c).
3. The stationary source contains a gas turbine.

Gas turbines were not modeled or included in the assumptions for asphalt plant dispersion modeling. Therefore, the Department cannot provide a factual basis for assessable emissions or the protection of ambient air quality.

4. The stationary source contains open burning or an incinerator.

Open burning and the operation of incinerators have substantive particulate matter (PM) emissions and ambient impacts, which were not included in the modeling analysis for simplicity.

5. The stationary source emits more than 100 tons per year (TPY) of a regulated air pollutant or is co-located at a Clean Air Act Title V Major Source, i.e., is subject to Title V permitting requirements.

However, if there is a General Permit 3 (GP3) for the activities listed above, the stationary source may operate under both permits.

If there is a rock crusher permitted under Minor General Permit 9 (MG9) it may operate in conjunction with this MG3 permit.

Potential emissions from an engine classified as stationary (i.e., an engine that does not qualify as nonroad engine¹ under 40 C.F.R. 1068.30) are accounted for in determining major or minor classification of a stationary source. Chapter 3.4 of EPA AP-42 provides an emission factor of 0.024 lb/hr for oxides of nitrogen (NO_x) for diesel engines greater than 600 hp. Based on that emission factor and the assumed annual operation of 3,650 hours, a diesel engine with a cumulative rating of greater than 2,280 bhp will exceed the 100-TPY major source classification threshold for NO_x. The Permittee may obtain a combination of permits, or an owner requested limit (ORL) under either 18 AAC 50.225 or 18 AAC 50.508(5) to limit the stationary source's NO_x emissions if stationary diesel engines in excess of this cumulative power rating will operate beyond the assumptions.

¹ Nonroad engines, as defined in 40 C.F.R. 1068.30 and adopted by reference in 18 AAC 50, are excluded from PTE calculations for permit applicability.

TECHNICAL ANALYSIS FOR THE PERMIT CONDITIONS

Condition 1 – Ambient Air Quality Protection

Legal Basis: This condition applies to all asphalt plants 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.

In Condition 1.4, 18 AAC 50.010 establishes the ambient air quality standards in the State of Alaska. This condition only applies to Asphalt Plants that operate at the Bells Flats area of Kodiak Island.

Factual Basis: The Department incorporated the same setback distance requirements detailed in the 2014 MG3, which were carried over from the 2009 MG3. The Department established these distances based on a generic air quality modeling analysis (see Attachment 1).

The Department established the setback distances in Condition 1.1 in order to protect the three hour SO₂ ambient air quality standard.

The setback distances are based on the best information available to the Department as noted in the 2003 GP3. 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 previously included a note that all complaints attributed to an operation are subject to investigation. The following note lists some of the possible outcomes of an investigation.

Note: The setback distances in Condition 1 are minimum requirements. You 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.*

Condition 1.3 is derived from 40 C.F.R. 1068.30-Nonroad Engine-(2)(iii), and specifies that an engine that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-

(1)(iii)², does not qualify as a nonroad engine if it remains or will remain at a location for more than 12 consecutive months or is located at a seasonal source and operates during the full annual operating period of the seasonal source. Associated MR&R requirements for nonroad engines are provided in Condition 12.

Condition 1.4 represents restrictions for the protection of ambient air quality. In response to complaints received from the Bells Flat area of Kodiak in circa-2003, the Department conducted a modeling analysis under 18 AAC 50.201 of Asphalt Plant operations in this area. The analysis showed that Asphalt Plant emissions would not violate the State's air quality standards/increments as long as the sulfur content of the liquid fuel did not exceed 0.4 percent (by weight) and the plant operated no more than 13 hours per day. The Department incorporated these limits in the 2009 MG3, and updated terms in the 2014 MG3 Rev. 1 to allow for more flexibility and simplicity. Rev. 1 allows operation of liquid-fired equipment provided that the Permittee certify that only ULSD is used in all engines and in the asphalt plant. Monitoring, recordkeeping, and reporting (MR&R) requirements for fuel sulfur content are provided in Condition 8 (Sulfur Compound (SO₂) Emissions).

Condition 1.5 protects ambient air quality by ensuring only one of any co-located asphalt plants operates at any single time. Co-located Asphalt Plants are not allowed to produce asphalt concurrently while operating under the MG3 Permit. This limits the impact of PM emissions to the ambient air to the emissions associated with those of the single largest asphalt plant located at the facility. During the third revision of the MG3, the Department also incorporated provisions to allow multiple asphalt plants to be co-located. The Permittee is required to calculate and record emissions of criteria pollutants from all asphalt plant operations authorized under the MG3 Rev. 3 any time the facility is co-located with a separately permitted asphalt plant monthly. When operating co-located sources, the monthly and twelve-month rolling totals for all sources located at the facility are required to be reported in the semiannual operating report.

Condition 2 - Relocation and Reporting Site Selection

Legal Basis: This relocation condition applies to all Asphalts Plants because Alaska Statute (AS) 46.14.211 authorizes the Department to issue a general minor permit that is valid for multiple locations within the state of Alaska. The permit also contains siting requirements that limit the asphalt plant from operating within specified distances to offsite occupied structures and has monitoring requirements based upon startup at new locations.

This site selection condition applies to all asphalt plants 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 interfere with the enjoyment of life or property. This condition applies unless a stricter condition exists in this permit, State Statutes, or Federal Guidelines.

Factual Basis: Based on the Department's 2003 modeling, new locations must comply with the setback distances in Condition 1. Permittees must provide notification to the Department 48 hours before startup at a new location using Air Online Services (AOS). If the new location is a preapproved location by the Department, then notification is required at least eight hours before

² Definition for *Nonroad Engine* in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine: that by itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

startup using AOS. For relocations to a maintenance yard, due to repair or for maintenance, the Permittee is required to notify the Department within 24 hours of relocation. For new locations not reported using AOS, the Permittee must notify the Department at least five days before relocation using either email or post office mail (Conditions 5.1.b or 5.1.c). See Attachment 1 for a description of modeling performed.

Condition 3 - General Recordkeeping

Legal Basis: The Permittee is required to keep records to demonstrate compliance with the terms and conditions of the permit and applicable 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 evidence of compliance with this requirement.

Condition 4 – Equipment Operated

Legal Basis: This condition applies under 18 AAC 50.200 which allows the Department to request information from the Permittee to determine compliance. This condition also applies under 18 AAC 50.546 to revise a minor permit, either at the request of the permittee or on the Department's own initiative. The request for updated equipment information also applies under AS 46.14 and 18 AAC 50 to determine permit applicability; modification is covered by definition under 18 AAC 50.990(59), provisions for revising or rescinding the terms and conditions of the MG3 permit are covered under 18 AAC 50.508(6).

Factual Basis: In Condition 4 the Department moved the equipment changes reporting requirement from within the general conditions to the main section of the permit. The Permittee is authorized to operate equipment listed in Table A of the permit. Changes to equipment operated must be reported under Condition 4 within each semiannual operating report. Condition 4.1 requires the Permittee to include language in any business agreement in which equipment authorized under the permit is leased to a third party and that the agreement include language that the lessee will comply with Alaska Statutes and Regulations. The rental or lease of permitted equipment authorized under this permit must be reported to the Department within seven days of signature of the business agreement.

Information on equipment changes will be used to aid in compliance determination and permit applicability. If the new equipment has a different PTE, the Department may request a new MG3 Rev. 4 application to reflect the changes in potential emissions or a Title V permit if PTE is greater than 100 TPY for any one regulated pollutant.

Condition 4 reinforces the obligation of the Permittee to report changes in the emissions unit inventory authorized under the permit to the Department when new equipment is rented for use at the facility or authorized units are leased to a third party. This ensures the facility does not operate above the Title V threshold and that unpermitted operators do not rent and operate equipment at unapproved locations without obtaining the appropriate authorization from the Department.

Condition 5 – General Reporting

Legal Basis: The Permittee, in accordance with Condition 5.1, is required to send reports to the Department using the language in SPC XVII (Reporting Requirements), adopted by reference under 18 AAC 50.346(b)(10) .

The Department used the language SPC XVII for Condition 5.2 which requires the Permittee to comply with the certification requirement in 18 AAC 50.205. The condition is required in all operating permits in accordance with 18 AAC 50.345(j) and 50.346(b)(10).

The Department used the language in SPC VII (Operating Reports), adopted by reference under 18 AAC 50.346(b)(6), for Condition 5.3. The Department modified SPC VII to better meet the operating seasons of road construction in Alaska, breaking the reporting periods up into a seven month period from April through October and a five month period from November through March.

Condition 5.4 requires the Permittee to submit information requested by the Department, as authorized under 18 AAC 50.200 and 50.345(i). This condition allows the Department to request any records that the Permittee is required to keep by other permit conditions to be used for compliance determination or cause to modify, revoke and reissue, or terminate the permit. Monitoring consists of receipt of the requested information.

Factual Basis: The Department added reporting by submittal through Air Online Services and ADEC reporting email to Condition 5.1. This condition lists the appropriate submission methods for report submittals and written notices as outlined by the Department’s SPC XVII Submission Instructions. Receipt of the submittal provides sufficient monitoring for this condition. This condition supplements the standard reporting and notification requirements for the permit.

Condition 5.2 requires the Permittee to certify all reports submitted to the Department. This condition supplements the reporting requirements of this permit.

Condition 5.3 restates the requirements for reports listed in the regulations. This condition also supplements the specific reporting requirements included elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition. The semi-annual operating period of April 1 through October 31 and November 1 through April 30 was retained from the MG3 Rev. 2 without modification.

Condition 5.4 requires the Permittee to submit information requested by the Department. This condition allows the Department to request any records that the Permittee is required to keep by other permit conditions to be used for compliance determination or cause to modify, revoke and reissue, or terminate the permit. Monitoring consists of receipt of the requested information.

Condition 6: Visible Emissions (VE) Requirements

Legal Basis: For a minor permit classified under 18 AAC 502(b), in accordance with 18 AAC 50.544(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.

An asphalt plant³ constructed or modified after June 11, 1973 may not reduce visibility through the exhaust effluent by 20 percent or greater averaged over any six consecutive minutes as specified in 18 AAC 50.055(a)(4). All other industrial processes and fuel burning equipment at this source may not reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes, as specified in 18 AAC 50.055(a)(1). Asphalt plants are industrial processes while the asphalt drum/dryer and diesel engines are fuel-burning equipment. Therefore, the same standard applies to the diesel engines used for power generation for an asphalt plant and to asphalt plants built on or before June 11, 1973. Table D of the permit shows the applicable VE standard for asphalt plants and diesel engines.

Factual Basis: Condition 6 requires the Permittee to comply with the state VE standard for asphalt plants and diesel engines, as shown in Table D. The MR&R requirements in Conditions 6.1 and 6.2 were based on SPC IX -Visible Emissions and Particulate Matter Monitoring Plan for Liquid Fuel-Burning Equipment and Flares (SPC IX), adopted by reference under 18 AAC 50.346(c) and Table 7. The conditions were modified to reflect the mobility of asphalt plants and the seasonal nature of their operations. The condition requires U.S. Environmental Protection Agency Reference Method 9 (EPA Method 9) VE readings on the asphalt plant under Condition 6.1 and the diesel engines under Condition 6.2 within two days of each operating month and within two days after relocating the plant. Conditions 6.3 and 7.1 address corrective actions based on Smoke/No Smoke and EPA Method 9 observations, respectively.

During the third revision of the MG3, the Department modified the schedule of monitoring required for asphalt plant emissions under Condition 6.1. Previous versions of the MG3 permit required Method 9 observations once every 30 operating days and within two days of restart after a shutdown of more than five days. In the MG3 Rev. 3, the Department simplified this to require Method 9 observations within the first two days of any calendar month the facility operates. This reduces the burden of tracking operating days, shutdown periods and when Method 9 observation requirements are triggered by Condition 6.1 while ensuring that periodic observations are included within each operating report.

Condition 6.1 requires the Permittee to monitor the baghouse or scrubber stack and to choose one emission point to monitor that is capable of producing fugitive emissions. Instead of monitoring

³ In this permit, "asphalt plant" means all asphalt plant equipment (including the aggregate dryer and drum mixer), except the diesel engine and vehicles.

every possible fugitive emission point, because there may be many, the Permittee should identify all possible fugitive emission points and select the one that appears to have the greatest continuous fugitive emissions, based on initial observation. Example fugitive emissions points are at aggregate handling areas, conveyor drop points, baghouse catch, drum mixer discharge, and hot mix storage silo receiving points. The Permittee should observe each point and determine which point continuously creates the most fugitive dust. This emission point should be monitored in accordance with Condition 6.1.

The VE MR&R requirements for the Asphalt Plant are different from those for diesel engines because asphalt plants may produce VE without smoke, which is typically associated with incomplete combustion. In the case of asphalt plants, VE may also result from loose particulate from the aggregate fed into the mixing drum. Thus, the MR&R requirements for diesel engines in Condition 6.2 includes the EPA Method 9 and the Smoke/No Smoke plans, which are part of SPC IX and required under 18 AAC 50.346(c). MR&R requirements for the asphalt plant does not include VE monitoring using the Smoke/No Smoke plan because particulate matter emissions from the aggregate are not considered "smoke."

The VE 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. Part 1068.30. An engine that qualifies as a nonroad engine under the definition in 40 C.F.R. Part 1068.30 paragraph (1)(iii), will not be considered a nonroad engine if it remains, or will remain at a location for more than 12 consecutive months. According to 40 C.F.R. Part 1068.31(e)(1), an engine used at a single specific location for 12 months or longer ceased to be a nonroad engine at the time it was placed in that location. Requirements relevant to nonroad engine are specified in Conditions 1.3 and 12. For MG3 Rev. 4, the Department clarified in Condition 6.2 that Method 9 monitoring only applies to stationary diesel engines and does not apply to nonroad engines.

Condition 6.3 was modified in MG3 Rev. 4 to more closely reflect SPC IX. The condition requires corrective action be taken when visible emissions are observed when conducting Smoke/No Smoke observations. After corrective actions are taken, the Permittee may then conduct seven days of Smoke/No Smoke observations or begin Method 9 observations.

Condition 7 – Particulate Matter (PM) Emissions

Legal Basis: 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 50.990(12), an "Asphalt Plant" means a stationary source that manufactures asphalt concrete by heating and drying aggregate and mixing asphalt cements; "Asphalt Plant" includes any combination of dryers, systems for screening, handling, storing, and weighing dried aggregate,

systems for loading, transferring, and storing mineral filler, systems for mixing, transferring, and storing asphalt concrete, and emission control systems within the stationary source.

Under 18 AAC 50.055(b)(5), an asphalt plant constructed or modified after June 11, 1973 may not emit PM in excess of 0.04 grains per dry standard cubic foot of exhaust gas (gr/dscf). Under 18 AAC 50.055(b)(1), all other industrial processes and fuel burning equipment at the asphalt plant may not emit PM in excess of 0.05 gr/dscf. Asphalt plants are both industrial processes and fuel-burning equipment while diesel engines are fuel-burning equipment. Therefore, the same standard applies to the diesel engines used for power generation for an asphalt plant and to asphalt plants built on or before June 11, 1973. These applicable PM limits are provided in Table D of the permit.

The particulate matter standard applies to stationary diesel engines and does not apply to nonroad engines, as discussed in the VE section above.

Asphalt plants are industrial processes while the asphalt drum/dryers are fuel-burning equipment. Table D of the permit shows the applicable PM standards for asphalt plants (depending on the date it was constructed or modified) and diesel engines.

Factual Basis: Conditions 7.1 through 7.3 reflects the PM monitoring, recordkeeping and reporting (MR&R) requirements for diesel engines set out in SPC IX. These are new conditions added in Revision 4 to address MR&R requirements if PM monitoring for diesel engines is triggered. The condition requires corrective action be taken if the results of any Method 9 reading is above the PM monitoring thresholds listed in Table D of the permit. If opacity readings are still above these thresholds after corrective action, the Permittee is required to perform a PM source test unless one has been performed on the emissions unit in the previous five-year period. PM source testing is also waived if corrective actions taken have reduced visible emissions to less than the PM monitoring thresholds.

Condition 7.4 covers the source testing requirements to demonstrate compliance with the applicable PM standard for the asphalt drum/dryer. Condition 7.4 also covers the MR&R required during source tests to demonstrate compliance with the applicable PM standard for the asphalt drum/dryer. The permittee is required to keep a daily log of asphalt production parameters listed, as well as the parameters listed for baghouses and scrubbers; these are to be reported in the FOR for source tests conducted during the reporting period. This permit does not include MR&R to demonstrate compliance with this particulate matter standard for fugitive emissions from asphalt plants since Reference Test Method 5 (*Determination of particulate matter emissions from stationary sources*) of 40 C.F.R. 60, which is used to determine compliance with this standard, is not applicable to fugitive emissions.

In MG3 Rev. 3 the Department altered permit language in Condition 7.4 to enable the Permittee to conduct the periodic PM source test at any time during the fifth year of operation. Language to conduct the source test “no later than” was changed to “during” the fifth year of operation. This provides the Permittee flexibility to schedule source testing several months after the five-year calendar window to coincide with possible larger projects later in the year where the facility can be tested at its maximum capacity. Industry indicated the previous MG3 Rev. 2 often forced Permittees to source test early or at a reduced capacity to maintain compliance. Therefore, the Department made this change in MG3 Rev. 3, which allows for scheduling flexibility while ensuring periodic verification the grain loading standard for the asphalt plant is meeting the standard of 18 AAC 50.055(b)(5).

Condition 8 - Sulfur Compound Emissions Standard Requirements

Legal Basis: For a minor permit under 18 AAC 50.502(b), in accordance with 50.544(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. Asphalt plants are industrial processes while the asphalt drum/dryer and diesel engines are fuel-burning equipment. Condition 8 requires the Permittee to comply with this standard and associated MR&R requirements to demonstrate compliance with this standard for the fuel-burning (liquid- and gas-fired) asphalt drum/dryer and engines. These requirements do not apply to the other nonfuel-burning parts of asphalt plants since they do not produce sulfur-compound emissions.

Factual Basis: The sulfur-compound emissions standard applies to stationary diesel engines and fuel used in asphalt burners. Although sulfur compound emissions standards do not apply to nonroad engines, all nonroad engines must be monitored to ensure the protection of ambient air quality standards in accordance with 18 AAC 50.010(2) and 18 AAC 50.110.

In Revision 3, the Department modified the reporting requirements under Condition 8 to simplify and reduce the amount of information to be reported by the Permittee and reviewed by the Department reporting by eliminating the requirement to submit all fuel receipts. Instead of attaching all fuel receipts or a statement from the fuel supplier with each FOR, the Permittee is required to keep these records for at least five years and only report the fuel grade used during the reporting period. If only ULSD or LSD was used for the entire reporting period, the Permittee should submit a statement certified by the Responsible Official stating that only ULSD or LSD fuel was purchased. If a fuel type other than ULSD or LSD was used, the Permittee should submit a list of fuel grades, including sulfur content for each fuel grade used. The Department also modified MR&R requirements to provide flexibility when fuel used during the reporting period is from a bulk supply/tank. The Permittee must report this in the semiannual operating report and maintain fuel receipts for five years. The Department will review these records during Full Compliance Evaluations or when requested per Condition 5.4.

The Permittee is also required to report the fuel type and sulfur content of fuel used in the asphalt burner. Records of non-distillate fuel or used oil for asphalt burners are to be kept on-site for at least five years.

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

Gas-Fired Fuel Burning Equipment: If a source permitted under an MG3 Rev. 3 uses pipeline quality natural gas, no monitoring terms are needed and reporting should consist of submitting a statement certified by the Responsible Official stating that only natural gas was used.

Highline Power: If a source permitted under an MG3 Rev. 3 uses highline power, no monitoring terms are needed and reporting should consist of submitting a statement certified by the Responsible Official stating that only highline power was used.

Condition 9 - Pollution Control Equipment Breakdown Reporting

Legal Basis: This condition is intended to ensure all EUs operating at the stationary source are in compliance with 18 AAC 50.544(b)(2).

Factual Basis: The Department included these reporting requirements to better ensure compliance with the permit conditions. Permittees can more effectively meet their compliance obligations by ensuring that all EUs are well maintained and that any pollution control equipment, if used, functions properly. These requirements are an extension of the Good Air Pollution Control Practices of Condition 18.

Condition 10 - Excess Emission and Permit Deviation Reports

Legal Basis: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240(c). The Department adopted this condition from SPC III under 18 AAC 50.346(b)(2) pursuant to AS 46.14.010(e). The Department copied *Form 2, ADEC Notification Form SPC 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 Department adopted this condition as SPC III under 18 AAC 50.346(c) pursuant to AS 46.14.010(e). The Department used a slightly condensed version of the standard condition which adequately meets the requirements of 40 C.F.R. 71.6(a)(3). No additional emissions unit or stationary source operational or compliance factors indicate the unit-specific or stationary-source-specific conditions would better meet the requirements. Therefore, the Department concludes that the standard conditions as modified meets the requirements of 40 C.F.R. 71.6(a)(3).

Conditions 11 - Air Pollution Prohibited

Legal Basis: This condition ensures compliance with the applicable requirements in 18 AAC 50.110. The requirements prohibit 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 Asphalt Plants produce emissions and because activities at or associated with the stationary source may result in complaints from the public. The Department adopted these requirements as SPC II under 18 AAC 50.346(a) pursuant to AS 46.14.010(e).

Factual Basis: The Department used a slightly condensed version of SPC II which adequately meets the MR&R requirements in of 40 C.F.R. 71.6(a)(3). Unforeseen emission impacts can cause violations of the requirements under 18 AAC 50.110. These violations can go undetected in the

absence of public complaints. Public complaints are an indication that a violation of 18 AAC 50.110 has occurred. The Permittee is required to investigate and report any complaints and must keep records that detail the date, time, and nature of all complaints received. The Permittee must maintain a record of the investigation and any corrective actions undertaken and submit copies of these records upon request of the Department. Therefore, the Permittee must monitor and respond to complaints to ensure compliance with 18 AAC 50.110

Condition 12 – Nonroad Engine Requirements

Legal Basis: Nonroad engines are not subject to the standards approved under the State Implementation Plan for the air pollution control for stationary sources. 18 AAC 50.100 states that the PTE from nonroad engines does not count towards the classification of a newly constructed or modified stationary source in accordance with AS 46.14.130.

Factual Basis: This condition requires the Permittee to keep records detailing the location and specifications of an engine if it meets the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii)⁴. The date and location log requested in this condition should be submitted with each Facility Operating Report (FOR). This condition was changed from the 2017 MG3 Rev. 3 to specify that the only nonroad engines that are applicable to this condition are those that specifically meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).

The Department needs to know if an engine no longer qualifies as a nonroad engine to ensure that PTE does not exceed Title V permit thresholds so that the proper MR&R for stationary engines are met.

A nonroad engine has the meaning given in 40 C.F.R. 1068.30, presented as follows, and is adopted by reference in 18 AAC 50. This condition and other conditions in this permit regarding nonroad engines only apply to portable nonroad engines that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii), not self-propelled nonroad engines under 40 C.F.R. 1068.30-Nonroad Engine-(1)(i) (e.g., a rock crusher on tracks).

40 C.F.R. 1068.30 Nonroad Engine Means

(1): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine that meets any of the following criteria:

- (i) It is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers).*
- (ii) It is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers).*
- (iii) By itself or in or on a piece of equipment, it is transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of*

⁴ Definition for *Nonroad Engine* in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine: that by itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(2) An internal combustion engine is not a nonroad engine if it meets any of the following criteria:

- (i) The engine is used to propel a motor vehicle, an aircraft, or equipment used solely for competition.*
- (ii) The engine is regulated under 40 CFR part 60, (or otherwise regulated by a federal New Source Performance Standard promulgated under section 111 of the Clean Air Act (42 U.S.C. 7411)). Note that this criterion does not apply for engines meeting any of the criteria of paragraph (1) of this definition that are voluntarily certified under 40 CFR part 60.*
- (iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. For any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced, include the time period of both engines in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. See § 1068.31 for provisions that apply if the engine is removed from the location.*

This condition provides supplemental information for nonroad engines monitored under Condition 8 and is intended to help ensure the protection of ambient air quality in accordance with 18 AAC 50.010(2)

Condition 13 – Stored Equipment

Legal Basis: This condition requires the permittee to record and report any equipment which is permitted with the Department under a separate permit but kept onsite with the asphalt plant operated under this permit solely for storage.

Factual Basis: If multiple sources are operated at the same site there is a potential that the aggregated emissions will exceed Title V permitting thresholds. This condition provides the Permittee the flexibility to store permitted asphalt plants, rock crushers and nonroad engines at an operating facility by reporting to the Department the co-located cold stacked equipment.

Condition 14 – Change of Ownership

Legal Basis: This condition requires new and previous owners of the permitted rock crusher plant to submit the transfer of ownership form and pay the administrative amendment fees in accordance with 18 AAC 50.400(f)(1)-(3) and 40 C.F.R. 71.7(d), adopted by reference in 18 AAC 50.040.

Factual Basis: If owner or operator of a stationary source transfers ownership of the stationary source, both new and previous owners must complete the transfer of ownership form. Once the form

is received by the Department, the new owner will receive authorization to operate the stationary source.

Condition 15 – Fee Requirements

Legal Basis: This condition requires the Permittee, owner, or operator to pay fees as set out in regulation. Paying 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 fees. The regulations in 18 AAC 50.400-499 specify the amount, payment period, and the frequency of fees applicable to a permit action.

Conditions 16 and 17 – Assessable Emissions & Emissions Estimates

Legal Basis: The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to calculate assessable emissions. This is SPC 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 Department has modified Condition 16 by deleting the phrase “in quantities 10 tons per year or greater” to match the revision made in 18 AAC 50.410, effective September 7, 2022. Additionally, Condition 16 is altered from SPC 1 to specifically call out forms in the permit and on the Department’s website that are designed to assist Permittees in calculating assessable emissions. Beyond as noted, the Department has determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3).

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 *Asphalt Plant 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 *Asphalt Plant Emission Calculation Guide* and SPC 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 forms and spreadsheets for PTE and assessable emissions calculations provided by the Department for the MG3 are based on burning No. 2 fuel oil in asphalt plants, and using liquid fuel with a sulfur content of 0.0015 percent by weight (ULSD) in stationary and nonroad diesel engines. If the actual sulfur content of the fuel is greater than this assumption, the assessable emissions calculations provided by the Permittee should reflect the actual sulfur content. The change in these values for asphalt plants and stationary diesel engines may result in SO₂ emissions that could trigger Title V or PSD permitting.

Condition 18 - Good Air Pollution Control Practices

Legal Basis: This condition ensures compliance with the applicable requirements under 18 AAC 50.346(b)(5) SPC VI - Good Air Pollution Control Practices and applies to all emissions units, except those subject to federal emission standards. 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 emissions 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 SPC VI unless more specific requirements adequately meet the requirements. In this case the Department has included in the permit more specific requirements applicable to asphalt plants.

Condition 18.1 - Facilities with a Baghouse

Legal Basis: This condition expands the requirements under 18 AAC 50.346(b)(5) SPC VI to provide a condition that more adequately meets the requirements under 18 AAC 50.346(b)(5) when the control device is a baghouse.

Factual Basis: The permit requires the Permittee to demonstrate compliance with the visible emissions and particulate matter standards in 18 AAC 50.055. Some Asphalt Plants may choose to control PM emission using a baghouse. This condition states the minimum frequencies for baghouse inspections, requires that the Permittee monitor the pressure drop across the baghouse,

and baghouse outlet temperature, and maintain these parameters within limits recommended by the manufacturer.

After a run is completed, the baghouse temperature will drop through the range where acid gasses will condense. Corrosion will be minimized if the temperature passes through this range as quickly as possible. Therefore, this requirement is to maintain fan operation per the manufacturer's recommendation until the baghouse has been purged. Reducing corrosion will lengthen the life of the baghouse and maintain the integrity of the fabric filter clamps and fasteners.

Ongoing monitoring of the parameters mentioned in this condition such as the pressure drop across the baghouse enables the operators to determine how the baghouse is functioning. For example, a baghouse differential pressure (DP) higher than the manufacturer's maximum recommended values may indicate that the cleaning system is not functioning adequately or a blocked hopper. DP significantly below the manufacturer's specifications could indicate holes in the bags.

MR&R requirements are listed in Condition 7.4 for simplicity and to keep all MR&R requirements for the asphalt plant and control equipment in the same condition.

Condition 18.2 - Facilities with a Wet Scrubber

Legal Basis: This condition expands the requirements under 18 AAC 50.346(b)(5) SPC VI to provide a condition that more adequately meets the requirements under 18 AAC 50.346(b)(5) when the control device used is a wet scrubber.

Factual Basis: The permit requires the Permittee to demonstrate compliance with the visible emissions and particulate matter standards in 18 AAC 50.055. Some Asphalt Plants may choose to control PM emission using a wet scrubber. This condition states the inspection requirements at the beginning of the operating season if the particulate matter control device is a scrubber.

The Permittee must maintain and operate the scrubber in accordance with the manufacturer's recommendations to include pressure drop, inlet and outlet water temperatures, water flow rate, and water pressure. These conditions are intended to support compliance with opacity and particulate standards by encouraging proper scrubber maintenance and operation. Scrubber efficiency is related to proper operation.

MR&R requirements are listed in Condition 7.4 for simplicity and to keep all MR&R requirements for the asphalt plant and control equipment in the same condition.

Condition 19 - Reasonable Precautions to Prevent Fugitive Dust

Legal Basis: This condition expands the requirements under 18 AAC 50.346(c) SPC 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 Asphalt Plants.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent 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. This condition lists examples of reasonable precautions.

This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engaging 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 Asphalt Plant is to be located within one mile of a business, residence or other occupied structure, the Permittee under this minor general permit must implement the Fugitive Dust Control Plan under Condition 19 or get the Department's approval to implement a different plan. The plan must be specific to any location named in the application and must be attached to the relocation notice required in Condition 2.

The "one mile" distance requirement came from a circa-2003 dispersion modeling analysis conducted in support of the 2003 General Permit (GP3) for Asphalt Plants. 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 a mile away.

A sample fugitive dust control plan is provided as Appendix B with the MG3 Rev. 4. This sample plan may be used as is or modified to fit the needs of the Permittee.

Dust Control Plans:

- If a location listed in an application or in an application addendum (see Form 1) is within one mile of the nearest occupied 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.
- 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 emissions unit.

Condition 20 – Terms to Make the Permit Enforceable

Legal Basis: 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 conditions for compliance required for all minor permits.

Condition 21 – Emission Inventory Reporting

Legal Basis: This condition requires the Permittee to submit emissions data to the state so the state is able to satisfy the federal requirement to submit emission inventory data from point sources to the EPA as required under 40 C.F.R. 51.15 and 51.321. The federal emission inventory requirement applies to sources defined as point sources in 40 C.F.R. 51.50. Under 18 AAC 50.275, the state also requires reporting of emissions triennially for stationary sources with an air quality permit, regardless of permit classification. This includes sources that do not meet the federal emission thresholds in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A. The state must report emissions data as described in 40 C.F.R 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A to EPA.

Factual Basis: Except as noted in the last paragraph, the Department used the language in SPC XV applicable to this minor stationary source, as adopted by reference under 18 AAC 50.346(b)(8), for the permit condition.

The emission inventory data is due to EPA 12 months after the end of the reporting year (40 C.F.R. 51.30(a)(1) and (b)(1)). Permittees have until April 30th to compile and submit the data to the Department. To expedite the Department's process of transferring data into EPA's electronic reporting system, the Department encourages Permittees to submit the emission inventory through the Department's electronic emission inventory submission system in the Permittee Portal on the Department's Air Online Services webpage <http://dec.alaska.gov/Applications/Air/airtoolsweb/>. A myAlaska account and profile are needed to gain access to the Permittee Portal. Other options are to submit the emission inventory via mail, email, or fax.

Detailed instructions on completing and submitting the emission inventory and the report form are available at the Point Source Emission Inventory page <http://dec.alaska.gov/Applications/Air/airtoolsweb/PointSourceEmissionInventory> by clicking the Emission Inventory Instructions button. The emission inventory instructions and report form may also be obtained by contacting the Department.

To ensure that the Department's electronic system reports complete information to the National Emissions Inventory, stationary sources with air quality permits are required to submit with each report emissions data described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A, as applicable. Title V stationary sources with potential annual emissions greater than or equal to any of the emission thresholds for Type A (large) sources, as listed in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A, are required to report emission inventory data every year for the previous calendar year (also known as the inventory year). For triennial inventory years, Type A sources only need to submit one report, not both an annual report and a separate triennial report.

Stationary sources, excluding owner requested limits (ORLs) issued under 18 AAC 50.225 and preapproved emission limits (PAELs) issued under 18 AAC 50.230, that do not meet any of the emission thresholds for Type A sources (large sources subject to annual reporting) are required to report emission inventory data every third year (i.e., triennially) for the previous inventory year under Condition 21. Minor sources such as asphalt plants operating under the MG3 permit are subject to triennial reporting in accordance with Condition 21.

The Department has modified Condition 21 from SPC XV by lowering the thresholds that require reporting to include all stationary sources regardless of permit classification (excluding ORLs and PAELs) to capture the new requirements found in 18 AAC 50.275, effective September 7, 2022. Additionally, the Department has added Condition 21.2 to specify the consistent emission factor requirements found in 18 AAC 50.275(b). Beyond as noted, the Department has determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3).

Condition 22.1 – General Source Test Requirements

Legal Basis: Condition 22.1 applies because this is a standard condition to be included in all permits in accordance with 18 AAC 50.345(k).

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.

Condition 22.2, 22.3, & 22.4 - Operating Conditions, Reference Test Methods, Excess Air Requirements

Legal Basis: This condition applies because the Permittee is required to conduct source tests, and also ensures compliance with 18 AAC 50.220(b) - (c).

Factual Basis: This condition supplements the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with Conditions 22.2 through 22.4 consists of the test reports required by Condition 22.9.

Reference Test Methods: You should use the following as reference test methods when conducting source testing for compliance with this permit:

- 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.
- Source testing for emissions of total PM, sulfur compounds, and nitrogen compounds gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R 60, Appendix A.
- 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.

Condition 22.5 - Test Exemption

Legal Basis: 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: As provided in 18 AAC 50.345(a), 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.

Condition 22.6, 22.7, & 22.8 - Test Plans, Notifications, and Reports

Legal Basis: These conditions ensure compliance with the applicable requirements in 18 AAC 50.345(l)-(o) and apply because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions in 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 this condition.

ATTACHMENT 1: ASPHALT PLANT DISPERSION MODELING SUMMARY

Alaska Department of Environmental Conservation Dispersion Modeling Summary for Asphalt Plants

Prepared by Bill Walker April 23, 2003

This summary is to support the renewal of general air quality operating permits for Asphalt Plants. 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 May 1, 1998 the Department issued permits for transportable or stationary Asphalt Plants. The first round permits were issued under the authority of AS 46.14.215 which requires a demonstration that operations do not cause violations of ambient air quality standards or applicable increments. In support of that permit, the Department did air quality dispersion modeling using SCREEN3⁵.

During the life of that permit, the Department has received a substantial number of complaints about emissions from some of the Asphalt Plants using the General Permit. The complaints involve the potential for adverse impacts on human health and welfare⁶. The complaints were about dust and odors, and specifically questioned whether the Department has evaluated the effects of neighbors being on elevated terrain, and the operation of more than one industrial facility at the same location.

The modeling for the 1998 permits did not look at either elevated terrain or multiple industrial operations at one location. At that time, the Department also did not have a way to estimate emissions from any sources other than the stack emissions from aggregate dryers, drum mixers, or diesel engines used to provide electrical power. Therefore, several important sources of particulate matter were not part of the analysis.

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 additional 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. [SCREEN3 does not.] The modeling is intended to represent Asphalt Plants operating anywhere in the state. To make the modeling as representative as possible, I used emission rates and stack parameters from 28 Asphalt Plant source test reports. I estimated stack heights from photographs or visible emission inspection [Method 9] reports. Source test reports

⁵ SCREEN3 AND ISCSD are EPA computer models for predicting concentrations of pollutants in the air to which the public has access. They use data on weather and on the emission sources to make the calculations.

⁶ It is important to note that most plants operating under the general permits did so without public complaints to the Department.

show operation at rates both above and below the standard of 0.04 gr/dscf. Emission rates for all stacks modeled were based on operation at that standard.

Fugitive particulate matter emissions were modeled as volume sources as this best approximates how they are released.

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, and for three hour concentrations multiplied by 0.9. This is consistent with EPA guidelines.

Background Concentrations

The background concentrations selected must be applied statewide. It would be far too unwieldy to develop separate conditions for each area of the state based on different background concentrations. 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 concentrations were:

SO₂ 24 hour – 26 µg/m³;
SO₂ three hour – 44 µg/m³;
PM-10 24 hour – 31 µg/m³.

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

Asphalt Plants have several structures that can cause downwash under some circumstances. The modeling used two structures common to any plant. The dryer or drum mixer was represented as a building 30 feet long and 12 feet high. Drum mix plants have a storage silo. Batch plants have a pug mill, and may also have a storage silo. To represent a silo or pug mill, I used a cylindrical structure 40 feet high and 14 feet in diameter.

Earlier modeling done before the public workshops held in January, 2003 relied on only one downwash structure -the drum mixer or dryer. A photograph the Department received of one Asphalt Plant in operation shows apparent downwash from larger structures. Based on that information adding the silo was more realistic and produced changes in the modeling results.

PM-10

A recent EPA publication⁷ provided estimates of fugitive emissions for:

- Dust from vehicle traffic, including dump trucks and loaders;
- Receiving new aggregate;
- RAP crushing;
- Screening;
- Load out; and
- For drum mix plants, silo filling.

I combined all modeled sources in three scenarios -high and low moisture for fugitive emissions, and assuming fugitive emissions from mobile sources was controlled well enough that emissions are negligible. Asphalt plant stack emissions were modeled at the NSPS emission limit of 0.04 gr/dscf for each scenario.

The estimated emissions from vehicle traffic, RAP crushing, and screening depend on whether there are emission controls, such as water sprays, and for vehicle traffic, whether the ground is wet or dry and dusty and the soil silt content. Emissions from these sources also depend on the production rates and other source specific factors. I used the emission factors and assumptions in the following table.

⁷ Hot Mix Asphalt Plant Emission Assessment Report, EPA-454/R-00-019, December 2000.

Table 1 Fugitive Particulate Matter Emission Factors and Assumptions			
Emission Source	PM-10 Emission Factor	Source of Emission Factor	Assumptions
All Sources			12 hours of operation per day 150 tons of HMA per hour
Loaders	$E = 2.6 (s/12)^{0.8} \times (W/3)^{0.4} \times 1/(M/0.2)^{0.3}$ where <i>s</i> is ground silt content <i>W</i> is vehicle weight <i>M</i> is soil moisture <i>E</i> is pounds of PM-10 /vehicle mile traveled	AP-42 Table 13.2.2	Caterpillar 928g Loader 12 ¾ tons 3 yard bucket capacity 20 feet from aggregate pile to inlet hopper Soil Moisture - Uncontrolled operation 0.7% - Controlled operation 20% 10% road silt ⁸
Trucks	Same as Loaders	Same as Loaders	10 ½ tons empty 12 ton capacity 200 meters from gravel source to dryer 50 meters to property boundary Soil Moisture - For uncontrolled operation – 0.7% - No emissions when wet 10% road silt ⁴
Screening	Controlled – 0.00084 Uncontrolled – 0.015 lb/ton	AP-42 11.19.2	
RAP Crushing	Controlled – 0.00059 Uncontrolled – 0.0024	AP-42 11.19.2	Factor for tertiary crushing

Results

The model predicted ambient air quality standards violations for each terrain height. For each model run I found the distance from the center of the operation to the nearest receptor with predicted compliance with the ambient standards. For conclusions based on particulate matter emissions, I subtracted 50 meters, which was the distance from the center to the outer edge of the volume sources representing fugitive emissions.

The distances to compliance were much greater for the model runs with fugitive emission sources uncontrolled. Distances were 1400 -1600 meters – about one mile.

[Modeling filenames: dwas00su, dwas30su]

⁸ Hot Mix Asphalt Plant Emission Assessment Report, EPA-454/R-00-019, December 2000, page 15.

For controlled fugitive sources, the model predicts ambient standards violations only at smaller distances from the operation (see Table 2 below). With the same assumptions, the model also predicts violations of PSD increments at distances closer than 800 feet for flat terrain, and 1100 feet for terrain that is elevated 15 meters above the ground level of the stationary equipment.

[Modeling filenames: dwas00mc, dwas20mc]

Table 2 PM-10	
	Distance to Compliance with ambient standard – All asphalt plants modeled comply at rated capacity [distance in meters, measured between an offsite inhabited structure and a stationary source or material piles or borrow source that is being actively worked.]
Worst Case All sources – Fugitives uncontrolled, dry conditions 0 meters terrain height	1550 meters
Best Case Fugitive emissions negligible except for RAP crushing and load out emissions 0 meter terrain ht. 10 meter 15 meter 20 meter	26 49 64 84

SO₂

All sulfur emissions are assumed for this modeling to originate from sulfur in the fuel. I used the actual fuel combustion rate during the source test from which I obtained the stack parameters, and assumed the sulfur content of the fuel was 0.5% sulfur (the ASTM specification for number 2 diesel or fuel oil.) I assumed the simultaneous use of a stationary 500 hp diesel engine.

SO₂ standards were predicted to violate the three hour ambient standard close to the facility. The greatest distance for any plant modeled (flat terrain) to a location where compliance with the standard was always predicted was 100 meters, or 110 yards from the combustion sources.

[Combustion sources were modeled as point sources emitted at a single location.] Modeling for most other plants predicted distances to compliance between 50 and 100 yards.

[Modeling filename: soadas00]

Multiple Industrial Facilities at One Location

I modeled the combined impacts of an asphalt plant and a crusher located 100 meters apart. I modeled all crusher sources using AP-42 emission factors for controlled sources, and an asphalt plant assuming that all fugitive emission sources except RAP crushing and load out emissions were controlled well enough to be negligible. Impacts did not exceed those when the same sources were modeled separately. Therefore, no permit conditions are included in the proposed permit to address emissions from combined sources.

Conclusions and Recommendations

Because the modeling that was performed relies on estimates of what is a "typical" facility, the conditions in the permit based on this modeling of the results are not as rigorous as would be done for modeling which more accurately represents an individual facility. A General Permit is necessary because of the nature of asphalt production operations in Alaska. Asphalt Plants may have to frequently relocate to be near enough to road or runway paving jobs. By the time a contract is awarded and a location identified, there is typically not enough time to obtain a facility specific permit and still be able to satisfy the contract.

Based on results for SO₂ the permit prohibits locating fuel burning equipment at an asphalt plant within 110 yards of a residence.

The worst case modeling for uncontrolled particulate matter sources predicts violations of the 24 hour ambient PM-10 standard up to a mile away. The permit Condition to address this possibility relies on a fugitive dust control plan. It would not be possible to write conditions that adequately restrict emissions from all sources without being overly stringent in many cases.

Based on results for PSD increments, the permit allows up to two years of operation at a location that is closer than 800 feet to a residence or other occupied structure, or 1100 feet if the structure is on terrain higher than 10 meters above the ground level of the stationary equipment. Construction activities that are in one location for less than two years are considered temporary, and not subject to PSD increments.

Uncertainties

Each of the assumptions described contributes uncertainty to the results of this analysis. Since there is no one set of assumptions that will fit all operations, the intent was to describe a reasonable worst case-assumptions that would not unreasonably prevent the operation under this permit of asphalt plants that have been operating under the previous permit without problems or complaints.

Since the General Permits can be used anywhere in the state, there is no one set of meteorological data that would be appropriate for all operations. This is why I chose a "screening" data set that presents a wide variety of conditions to find the reasonable worst case one hour concentration. The predictions would be appropriate to the extent that these screening conditions fit any actual location for an extended number of hours, the wind direction is toward nearby structures such as businesses or residences, and operation occurs during these conditions for about 12 hours per day. These uncertainties must be considered when applying the modeling results to any applicability criteria or permit conditions for the General Permit.

Odor

The odor from asphalt plants is a common source of concern to nearby residents, especially those with special health problems. However, odor cannot be modeled, so it could not be included in this analysis.